THE CAULDRON

1917

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The 1917 Cauldron

The Cauldron, 1917

The Annual

of the

Co-operative School of Engineering

of

Northeastern College

Volume One

Boston, Mass.

Hercules Wallace Geromanos

To Hercules Wallace Geromanos

Whose patient, well-ordered, and efficient
life of service has meant so much
to the Co-operative School
of Engineering, the

Students gratefully dedicate this book

HERCULES WALLACE GEROMANOS was born in Cincinnati, Ohio, March 15, 1880, and lived in Brooklyn, from 1880 to 1885, attending a private kindergarten in 1884 and 1885. He then moved to Philadelphia, attending private and grammar school. In 1892 he went to Springfield, Mass., attending grammar and high school, being graduated from the latter in 1889.

Mr. H. W. Geromanos then entered the Massachusetts Institute of Technology, taking the Metallurgical Chemistry Course, receiving the degree of S. B. in 1902. After a year teaching Metallurgy at Columbia University he studied Open Hearth Steel Manufacture in the Open Hearth Mill of the Lackawanna Steel Company at Buffalo.

In 1905, owing to ill health, he came east for a rest and ended up by going into teaching, being appointed to take charge of the Science Department of the Natick High School in the Fall of 1905, and later was elected to take charge of the Department of Chemistry of the Malden High School and continued in that position for three years. In 1909 he was appointed Dean of the Evening Polytechnic School of the Boston Y.M.C.A. and started Co-Operative Courses. In 1910 he became Dean of the Co-Operative School of Engineering, where his good nature, business ability, and energetic interest in all college activities have endeared him to the entire student body.

Foreword

FOR the first time in the history of The Co-operative School of Engineering, an annual is being produced which will contain all of the student and college activities. When time and circumstance have scattered us, this Cauldron will bring us back again to our Alma Mater, and recall friendships and associations which have made our College career dear to us. May this year's Cauldron be worthy of your praise and not deserve too much censure.

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Faculty of the Co-operative School of Engineering

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Joseph A. Coolidge, S.B.	*Instructor in Physics and Mathematics*
Calvin P. Eldred, S.B.	*Assistant Professor of Electrical Engineering*
Carl S. Ell, S.B., M.S.	*Professor of Civil Engineering*
H. W. Geromanos, S.B.	*Professor of Chemistry*
Ervin Kenison, S.B.	*Instructor in Descriptive Geometry*
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John R. Leighton	*Instructor in Civil Engineering*
Harold C. Mabbott, S.B.	*Assistant Professor of Mechanical Engineering*
William F. Odom, S.B., M.S.	*Assistant Professor of Chemical Engineering*
Marcus F. Pinkham	*Instructor in Mathematics and Drawing*
W. Lincoln Smith, S.B.	*Assistant Professor of Electrical Engineering*
Ellwood B. Spear, A.B., Ph.D.	*Instructor in Inorganic Chemistry*
Howard C. Thomas, S.B.	*Instructor in Civil Engineering*
Frank Vogel, A.B., A.M.	*Instructor in German*
Robert S. Williams, S.B., Ph.D.	*Instructor in Qualitative Analysis*
Robert D. Black	*Assistant in Chemistry*
Irving Clausing	*Assistant in Chemistry*
Roland G. Porter	*Assistant in Electrical Engineering*

Special Lecturers

Philip F. Clapp, B.C.S.	*Determination of Factory Costs*
Thomas E. Penard, S.B.	*The Mathematics of Engineering*
William Thompson Sedgwick, Ph.D., Sc.D.	*Public Health*
George Wright Swett, S.B.	*Recent Developments in Cotton Mill Machinery*
William Elgin Wickendon, S.B.	*Electrical Engineering as a Profession*

History of the Co-operative School of Engineering

TO fully understand as unusual an idea as that carried out by the Co-Operative School of Engineering, it is necessary to recognize certain fundadamental educational conditions, which naturally are not given much consideration by the average person.

Thus it has seemed desirable, and necessary, to preface this brief history of the School by some general remarks, which, I hope, may serve to explain the reasons for certain things we are doing, which differ from some of our preconceived ideas of higher education.

In the spring of 1909 I was appointed Dean of the Evening Polytechnic School of the Department of Education of the Association and, as part of my duties, was also to take charge of all technical courses offered in the day, the first of which were to be started in the fall of that year.

Before the opening of school in September, the prospectus of a proposed part-time engineering school, about to be started by a mid-western Association, came to my attention, and gave the starting impetus to the idea which since has developed into the Co-Operative School of Engineering of Northeastern College.

Upon looking into the courses already offered in the Polytechnic School, and those contemplated for the day school, it was found that the essential subjects of engineering work were either already being given, or would be in the fall, and that by a combination of day and evening courses we would be justified in starting Co-Operative Courses in Civil, Mechanical and Chemical Engineering for high school graduates.

For several years, previous to taking up the work in the Department of Education, I had taught in high schools, and had been greatly impressed by the large percentage of students who were graduated from the high school and were unable, for various reasons, to continue their education to fit themselves for specific positions in the community. Two of the greatest obstacles were: First, lack of money, and second, lack of the complete preparation that the colleges and technical schools required. To attend college for four years required from $800 to $1200 capital, for tuition and books alone, and a student had to plan all his work for four years in high school with this end in view. It was practically impossible for one to start on any course, save the college preparatory one, and get the required work done adequately for admission to college. This condition naturally resulted in a great many, who took the commercial, or general courses, on entering high school, and later found their ability and finances to be such as to justify a college, or technical training, being debarred from such further education because they could not make up all the requirements demanded by the higher institutions.

The part-time plan of engineering education seemed to me to be a great stride in the direction of taking care

of many such young men, for it obviously would enable them to finance their education by the returns from their outside work. Furthermore, in such an educational plan, unless it extends for more than four years, which seems to me undesirable for many reasons, only the essential subjects, required in the profession, can be taught, hence such entrance requirements as the modern languages, history, literature, etc., do not seem to be necessary and hence can be omitted. Under these conditions many students could easily prepare to enter such work by taking special high school subjects in the last two years of their course. On the other hand, to carry on work of engineering character and grade, requires a mental maturity that is not ordinarily found in students younger than high school graduates, and so while the specific, scholastic requirements might be reduced to such fundamental subjects as English Composition, Mathematics and Physics, the general requirements in regard to character, demonstrated capacity, and maturity of mind, must be very rigid for such an entrance basis to be efficient.

The foregoing considerations led to the basis adopted for entrance to the School, namely, graduation from a high school, or its equivalent, and entrance examinations in English, Mathematics and Physics, supplemented by a careful consideration of the candidate's fitness, as determined by our inquiries in regard to his personal character, ability, attitude toward study and work, as furnished by school officials, employers, and others with whom we communicate in regard to him. It should be borne in mind that we are fully impressed with the desirability of a broad, general education, and the inclusion of general subjects in any college curriculum, but in a course of this kind it is felt that the fundamental object is to fit the student to occupy a definite position in a very limited time, and hence only the necessary training can be given thoroughly.

Another, and very important, advantage in such part-time education, is the opportunity it affords the student to find himself. The combination of school studies and practical engineering, brings home to the student, in a way accomplished by no other means, just what his chosen life work is to be, and early shows whether he has made the right choice, or not. Our experience has demonstrated that this is one of the greatest advantages of this type of education for a large number of men. Being, then, in hearty sympathy with the idea, having the necessary conditions for carrying it out, and not being hampered by traditions, or unsympathetic committees, it was decided to give the plan a trial.

The next move was to get some engineering concerns to agree to take our students on the part-time basis. Through the efforts of the organization then known as "Boston—1915" the following firms were persuaded to take our students: The Boston Elevated Railway Co., The Boston and Maine Railroad Co., The Boston and Albany Railroad Co., and The Boston Consolidated Gas Co. The next work was to get out a prospectus, which was done in typewritten form, and sent to about fifty high

schools in, or near Boston. At last in the fall of 1909 the courses opened with eight students; two taking the Civil Engineering Course, who were assigned to the Boston and Albany Railroad Co., two taking the Mechanical Engineering Course, who were placed with the Boston Elevated Railway Co.; three others taking the Mechanical Engineering Course, two of whom went to the Boston and Maine Railroad Co., while the third was employed by the Boston Consolidated Gas Co., having as his alternate the eighth student who took the Chemical Engineering Course. The men worked in pairs, alternating between the School and the employing firms at one week intervals. At school they took Drawing, Chemistry, Physics, and English in the day, and Mathematics and Surveying in the evening. Thus the first year of work started with four students in school, who exchanged places with the other four at the close of each weekly period. There were in all, four instructors, who taught on a part-time basis, coming in only at the regular hours for each subject, either day, or evening. From the first the plan demonstrated its capacity for successful operation. The students made excellent progress with the employing firms, and at school showed the capacity for hard, intelligent work that is so essential an element of success. During this first year the Association Building on Boylston Street was destroyed by fire, and the school work was omitted for a short period. Soon, however, we started again in temporary quarters at the Boston Young Men's Christian Union, and later were housed at Ashburton Place. The headquarters of the students at this latter place was a small room about ten feet by six feet, on the top floor, which was just capable of holding four desks crowded closely together, with the four chairs for them, and a very small table for the instructor and one chair. The blackboard was about five feet by four feet in area.

By the late spring of 1910 we got out a small printed prospectus of about sixteen pages, which was mailed to about one hundred high schools and, in addition, I visited many of the high schools to personally explain the work we were doing.

In the fall of 1910, the courses opened with about thirty-eight students, two more part-time instructors, and several more firms employing the students. By the close of that year, it was demonstrated that the idea was not only entirely feasible, but met an absolute need in the community, that was cared for by no other agent. As a result, the Co-operative Courses were changed to the Co-Operative School of Engineering, with myself as Dean, and have since been continued on that plan.

Thus in September, 1911, the School opened for the first time as a complete entity, with about sixty students, eight part-time instructors giving courses in the day, the evening work for the men reduced to only two subjects, and several more firms employing the students. Also an additional Course, Electrical Engineering, was added to the curriculum. 1912 and 1913 saw still further growth in the enrollment, and the spring of 1913 saw the first

graduating class, four members of the original eight, who had started four years before.

In the fall of 1913 the School moved into its present quarters in the new Association Building, starting out for the first time under favorable conditions of housing and equipment. At that time the enrollment was about one hundred and ten students. During that year it was decided to try a two-week alternation period in place of the single week, and this arrangement went into effect about the middle of the year. The longer period was found to be much better from the standpoint of employers and students, and so was adopted permanently and has been continued ever since. During this year, all night courses were given up, and the entire schedule of studies has since been carried on during the day.

During the years of 1915 and 1916, the student body kept up its steady growth, and the present school year sees one hundred and sixty students enrolled in the various courses. The co-operating firms have been increased from the first four, to nearly forty, and whereas in the early years of the School, it taxed one's persuasive powers to the utmost to get a concern to even consider giving the plan a trial, at present, owing to the fine records made by the students in their work, we cannot supply enough men to fill the positions offered. In the School, the courses have been modified and added to, in pursuance of the policy that has predominated from the start, that our function was service to the young men, and that only by the best education that we could give, could such service be rendered properly. The standards, always high, have been continuously raised, and the instructing staff, steadily increasing in number and efficiency, has grown from the first four part-time instructors to the present ten full-time and six part-time men, who are so ably working to bring the School to still higher efficiency and ideals. While the foregoing statements tell what the School has done, it is the graduates who are the only true measure of the work, and it is with the greatest pride that we look at the men who have gone into the world's work after their training with us and so ably demonstrated the value of our work to them.

Although relatively few in number, being in all less than seventy-five, they are to be found scattered about the United States, in Canada, Porto Rico and the Philippines, some as electrical engineers, some designing draftsmen, others construction engineers, still others foremen, and yet others teachers, but, wherever they are found, they are showing the world that the School is doing its share to train men, not only to carry on the work of engineers, but to be men of high character and ideals, whose greatest satisfaction lies in the fact that they are performing their duties ably and conscientiously, and so are making the world better for their being in it.

H. W. Geromanos.

Civil Engineering Department

THE military engineers, who had to construct roads, fortifications, and other works essential to success in war, were for a long time the only ones to whom the title of engineer applied. However, about the middle of the 18th century there began to arise a new class of engineers who concerned themselves with works which were not built by soldiers and which were not exclusively military in purpose. This class of engineers came to be known as Civil Engineers. All engineers were then known as either military engineers or civil engineers.

Out of civil engineering, by a natural process of subdivisions, have come the many other engineering professions which will continue to be sub-divided as human knowledge progresses. Perhaps the first branch of engineering to be recognized as separate was Mechanical Engineering, which was soon followed by numerous other branches of engineering, so that Civil Engineering today is only one of many recognized branches of engineering.

When the Co-Operative School of Engineering was founded in 1909, the Civil Engineering Department was not recognized as such as it had no equipment, no full time instructors, and only two students. The only strictly Civil Engineering subjects which were given were those offered by the Evening School of Engineering. However, the following year the enrollment had increased to 14 and the Civil Engineering Department really had its beginning at this time. Mr. C. S. Ell, then a senior in the Massachusetts Institute of Technology, was engaged on a part time basis to give the Civil Engineering subjects in the first year, the work in the upper years being omitted. The equipment consisted of such surveying instruments as could be rented for each exercise.

At the beginning of the school year 1911-1912, the School purchased supplies consisting of a second-hand transit, stadia rod, tapes and pins and sufficient additional equipment was rented to enable the Department to give all of the first and second year work in the curriculum. In the fall of 1912 Mr. Ell was appointed as Head of the Civil Engineering Department, complete equipment for Elementary Surveying, Higher Surveying and Railroad work was secured and instruction was given in the first three years of the course.

The department has continued to grow in enrollment so that this year there are 50 students enrolled. Several new members have been added to the Instructing Staff and the course has been revised and strengthened so that graduates will find no difficulty in competing with other Civil Engineers. The department has always been popular with the students, as it has invariably enrolled a larger number than any other course in the School.

Mechanical Engineering Department

THE Mechanical Engineering course at the Co-Operative School of Engineering was started in 1909 with four students, which was at that time just one half of the School. During the first years of the course there was no regular Mechanical Engineering Instructor, as no professional work was given until the third year. Mr. Penard taught thermodynamics in the evening school and the day school men had to attend the evening session for that subject. Mr. Penard also taught mathematics in the day school which he continued doing until this year.

In 1911 Mr. Albert L. Gardner, an assistant at the Massachusetts Institute of Technology came to the School as a part time instructor, and the next year as a full time instructor and head of the Mechanical Engineering Course, a position which he held until 1915, when he left to accept a position with the Fore River Shipbuilding Company. Mr. H. C. Mabbott took Mr. Gardner's place in 1915 and is now in charge of the course.

At the present time there are twenty-seven men in the course, of whom seven are in the fourth year. This is the largest number of Senior Mechanicals since the School began. Next year there will probably be about the same number.

The Mechanical Course has not increased in the earlier years as it should have. The training with some of our co-operating firms is excellent and in some of the machines shops the work and pay are equivalent to that of the outside man. The best thing about it is that when the Co-op gets his diploma he is ready to take a position of some responsibility instead of going through a probationary period that the average college man has to go through.

At the present time the opportunities of the Mechanical graduate are greater than in most other engineering lines. High labor costs has forced engineers to design labor saving machinery to keep down the prices, and there is still room for all the good men that the schools of the country can produce. But it is the man who combines practice with theory who gives the most to his employer. Neither all practice nor all theory can get along by itself, so it would seem that the opportunities for our Co-operative man with a balanced judgment and education should be ever greater than the average technical school graduate.

Electrical Engineering Department

THE uses of electricity have now become so diversified that the term Electrical Engineer means less and less. A man to state his profession must state the particular branch of Electrical Engineering in which his work lies. In other words, we are in the age of the specialist, the age where an engineer although broadly an Electrical Engineer, is devoting his energy to some particular type or branch of Electrical Engineering.

It is fortunate for the engineering schools that the fundamental principles of Electrical Engineering are generally applicable to its many branches without specialization. If this were not true it would be difficult for the curriculum to keep pace with the demands upon it. The employer of today is not particularly interested in the special courses that the graduate has taken, but he is vitally interested in knowing if the graduate has a thorough grounding in the fundamental principles of his profession. Together with this knowledge must go alertness, resourcefulness and reliability. Therefore the function and the purpose of the Electrical Engineering Department is not merely to give a thorough training in fundamental theory, but also to give the men these other requisites which are absolutely necessary for their ultimate success.

The Electrical Engineer must have a comprehensive knowledge of certain subjects closely associated with Electrical Engineering, namely, Physics, Applied Mechanics, and Thermodynamics. Consequently a very considerable portion of the student's time is devoted to the study of these important subjects. Aside from the training received in these courses, they are a necessary introduction to the laws and principles governing electricity.

The professional subjects in the Electrical Engineering Course are broadly in two groups, one dealing with electrical machinery, and the other with the commercial application of electrical machinery. In the first group a study is made of the fundamental principles and the operating characteristics of the various types of electrical machinery, apparatus and measuring instruments. In the second group the student considers their commercial applications and the inherent characteristics effecting their uses. He also applies his knowledge of alternating current circuits to the study of Electrical Transmission of Power, a subject of increasing commercial importance.

An essential part of the Electrical Engineering Course is the laboratory work which is carried on for three years. We are fortunate in possessing an adequate Machinery and Electrical Measurements Laboratory in which to give the important training. In the Laboratory work the student is not merely required to learn how to operate the different types of machines but to obtain their characteristics. This in itself is an important correlation to the classroom work, and the experimental determination of

the fundamental laws and principles of electricity and electrical machinery is of great value. The laboratory work, however, goes farther, and the student is thrown more and more on his own resources as the work progresses. Each experiment to be performed becomes an assignment of certain definite results to be obtained in the best possible manner. A complete and concise report is required on the proposed method of performing each experiment as well as a final report on the results obtained. Special emphasis is placed on these reports because of the training that the student receives in the proper use of English.

The men in the Electrical Engineering Course are particularly fortunate in their work with the co-operating firms. The experience gained will be a distinct asset in the future. For the present they are brought into intimate contact with Electrical Engineering as applied to manufacture, installation, operation, and maintenance of electrical machinery, apparatus and instruments. To them the commercial side of Electrical Engineering is not a thing of the future to be investigated after graduation; instead it is a part of their college training.

Chemical Engineering Department

THE Chemical Engineer is essentially a modern product. Keen competition is compelling manufacturers to replace the old rule-of-thumb methods by scientific control and to utilize as far as possible every product of their plants. Consequently, a rapidly growing demand has arisen for men who possess, in addition to skilled chemical knowledge, the training and ability for the efficient control of plants and processes, economical utilization of power, the conversion of factory by-products into marketable commodities, and the adaptation and design of mechanical appliances to carry out chemical reactions on a large scale. The training of such men, since they must be able to consider propositions, processes, and plans from the combined viewpoints of the chemist and the engineer, should of necessity be very broad, combining that of both of the above named professions.

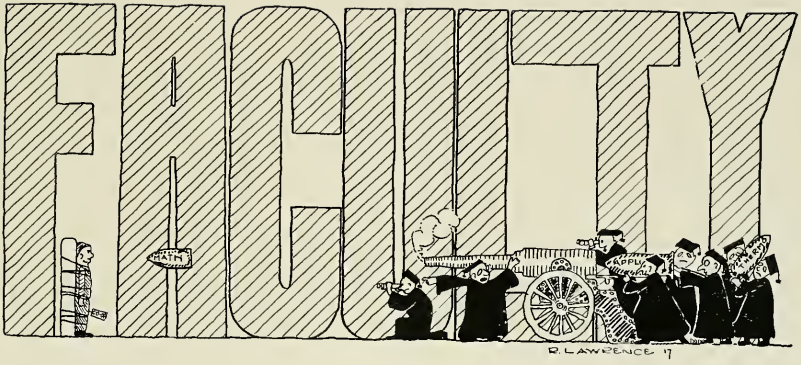
It was with these considerations that the course in Chemical Engineering was put into the curriculum because it was needed to complete the ideal sought, which was to offer such courses as were fundamental to all lines of engineering. The accomplishment of this object was attained by the School undertaking to offer courses in Civil, Mechanical, Electrical, and Chemical Engineering, all other engineering work such as Structural, Sanitary, Mining, etc., being really only modifications based on those four branches.

The year the School started, only one student took the Chemical Engineering course, and in the succeeding early years of the School it was the course that apparently did not appeal to many students. In consequence of this fact the first graduating class of the School contained one Chemical Engineer, the second and third classes to be graduated did not contain any, and last year's class only three. This year there is only one in the senior class, one of our seniors having dropped out to accept a position as chief chemist of a large paper company. Owing to the prominence of chemistry and the chemical industries to which the war has given great publicity, that course is rapidly coming into its own and now the lower classes have a large percentage of chemical men in their make-up. This year we are co-operating with seven firms in connection with the Chemical Engineering course and could have more, had we sufficient students to supply the demand.

It is interesting to note that statistics at the beginning of the present year, showed the various years of the School to have the following number of chemical engineers:

First year	22
Second year	13
Third year	5
Fourth year	2

From the foregoing, it may be seen how the trend is more and more to make the Chemical Engineering course the big course of the School.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R. LAWRENCE '17

Walter Irving Badger, Jr., B.A., M.A., LL.B., *Instructor in English.* M.A., B.A., Yale, 1913; LL.B., Harvard Law School, 1916.

Law Office of Walter I. Badger, 1916-17; Instructor in English, Co-Operative School of Engineering from 1915.

Member of D.K.E., T.N.E., and Phi Beta Kappa Fraternities; Harvard Club of Boston, Yale Club of Boston, Yale Club of New York, Union Boat Club, and Boston City Club.

Residence: 126 Brattle Street, Cambridge, Mass.

Joseph Arthur Coolidge, S.B., *Instructor in Physics and Mathematics.* S.B., Harvard, 1910.

Instructor in Physics and Mathematics, Co-Operative School of Engineering, from 1911.

Member of Harvard Mathematical Society.

Residence: 20 Martin Street, Cambridge, Mass.

Calvin Powell Eldred, S.B., *Assistant Professor of Electrical Engineering.* S.B., Massachusetts Institute of Technology, 1912.

Statistical Department, Stone & Webster, 1912; Research Assistant, Massachusetts Institute of Technology, 1912-14; Travelling Agent, N.Y., N.H. and H. R.R., 1914; Assistant Instructor, Pratt Institute, 1914-16; Head of Electrical Engineering Department, Co-Operative School of Engineering from 1916.

Residence: 63 Manthorne Road, West Roxbury, Mass.

Carl Stephens Ell, A.B., S.B., M.S., *Assistant Dean, Professor of Civil Engineering.* A.B., De Pauw University, 1909; S.B., Massachusetts Institute of Technology, 1911, M.S., 1912.

Inspecting Engineer, New York State Department of Health, 1912-13; Head of Department of Civil Engineering, Co-Operative School of Engineering from 1913; Assistant Dean from 1914.

Member of Delta Upsilon Fraternity, Boston Society of Civil Engineers and De Pauw Club of Boston.

Residence: 206 Metropolitan Avenue, Roslindale, Mass.

Frederick Revill Kneeland, S.B., *Instructor in Organic Chemistry.* S.B., Columbia University, 1899.

Instructor in Organic Chemistry, Massachusetts Institute Technology, and Co-Operative Engineering School from 1916.

Member of Delta Phi Fraternity, American Chemical Society, American Association for the Advancement of Science, University Club, Boston, and Columbia University Club, N.Y.

Residence: Hotel Ludlow, Boston, Mass.

John Robert Leighton, *Instructor in Civil Engineering.*

Co-Operative School of Engineering, 1914; Instructor in Civil Engineering, Co-Operative School of Engineering from 1914; Instructor in The Evening School of Engineering from 1915; President of the firm of R. S. Leighton & Co.; Member of Co-op Society of Civil Engineers.

Residence: 100 Winslow Street, Everett, Mass.

Ervin Kenison, S.B., *Instructor in Descriptive Geometry.* S.B., Massachusetts Institute of Technology, 1893.

Assistant in Mechanical Drawing and Descriptive Geometry, Massachusetts Institute of Technology, 1893-95; Instructor, 1895-08; Assistant Professor, 1908-1913! Associate Professor from 1913; Instructor of Descriptive Geometry, Co-Operative School of Engineering from 1911.

Member of Society for Promotion of Engineering Education, National Geographic Society and Mathematical Association of America.

Residence: 45 Parker Street, Lexington, Mass.

Harold Clarkson Mabbott, S.B., *Assistant Professor of Mechanical Engineering.* S.B., Massachusetts Institute of Technology, 1912.

Peerless Motor Car Company, Cleveland, Ohio, 1912-14: Pratt and Whitney, Hartford, Conn., 1914-15; Head of Mechanical Engineering Department, Co-Operative School of Engineering from 1915.

Member of Theta Chi Fraternity.

Residence: 1305 Commonwealth Avenue, Allston, Mass.

William Franklin Odom, S.B., M.S., *Assistant Professor of Chemical Engineering.* S.B., Clemson College, 1909; M.S. Lehigh University, 1913.

Head of Department Science, Dublin, Ga., High School, 1909-10; Head of Department Science, Hampton, Va., High School, 1910-11; Instructor Lehigh University, 1911-13; Austin Teaching Fellow, Harvard University, 1913-14; Instructor Massachusetts Institute Technology, 1914-15; Instructor Co-Operative School of Engineering, 1915-17; Assistant Professor of Chemical Engineering from 1917.

Member of American Chemical Society.

Residence: 12 Mellen Street, Cambridge, Mass.

Marcus Frederick Pinkham, *Instructor in Mathematics and Drawing.*

Graduate, Lowell School for Industrial Foremen, 1911; Draughtsman, E. E. I. Co., Station Engineering Department, 1914-16; Instructor Evening School of Engineering from 1913; Instructor Co-Operative School of Engineering from 1916.

Member of National Electric Light Association.

Residence: 197 Dudley Avenue, Roslindale, Mass.

Ellwood Barker Spear, B.A., Ph.D., *Instructor in Organic Chemistry.* B.A., University of Manitoba, 1899; Ph.D., Heidelberg, 1906.

Assistant in Research Laboratory of Physical Chemistry, Massachusetts Institute of Technology, 1906-07; Instructor in Qualitative Analysis, 1907-08; Instructor in Inorganic Chemistry, 1908-10; Assistant Professor, 1910-16; Associate Professor from 1916; Instructor, Co-Operative School of Engineering from 1914.

Member of American Chemical Society.

Residence: 27 Walker Street, Cambridge, Mass.

William Lincoln Smith, S.B., *Assistant Professor of Electrical Engineering.* S.B., Massachusetts Institute of Technology, 1890; Special Course, Mathematical Physics, University De Paris, summer of 1890.

Instructor Department Physics and Electrical Engineering, Massachusetts Institute of Technology, 1890-01; Municipal Electrical Inspector, Concord, Mass. from 1906; Dean Electrical School Y.M.C.A., Boston, 1907-11; Instructor Co-Operative School of Engineering, 1910-17; Assistant Professor from 1917; Member Electrical Council Underwriters' Testing Laboratories, Inc., Chicago, 1917.

Member of Mathematical and Physical Club, English Society for Physical Research, Secretary National Association of Electrical Inspectors.

Residence: 4 Academy Lane, Concord, Mass.

Howard Cushing Thomas, S.B., *Instructor in Civil Engineering.* S.B., Massachusetts Institute of Technology, 1915.

Assistant in Civil Engineering, Massachusetts Institute Technology, 1915-16; Instructor in Co-Operative School of Engineering from 1916.

Member of Boston Society of Civil Engineers.

Residence: 200 Washington Street, Wellesley Hills, Mass.

Frank Vogel, A.B., A.M., *Instructor in German.* A.B., Harvard, 1887; A.M., 1892.

Instructor in Modern Languages Massachusetts Institute of Technology, 1888-92; Assistant Professor, 1892-1900; Associate Professor, 1900-04; Professor from 1904; Member of Boston School Committee, 1901-1904; Instructor in German, Simmons College, 1902; Instructor in German, Co-Operative School of Engineering from 1916.

Member of Delta Phi Fraternity.

Residence: 95 Robinhood Avenue, Jamaica Plain, Mass.

Robert Seaton Williams, S.B., Ph.D., *Instructor in Qualitative Analysis.* S.B., Massachusetts Institute of Technology, 1902, Ph.D., University of Gottingen, 1907.

Assistant in Chemistry, Massachusetts Intitute of Technology, 1902-05; Instructor in Chemistry, 1907-1911; Assistant Professor of Analytic Chemistry from 1911; Instructor in Qualitative Analysis, Co-Operative Engineering School, from 1916.

Member of K^2S, American Chemical Society, British Institute of Metals, Technology Club of Boston.

Residence: 156 Magazine Street, Cambridge, Mass.

Irving Clausing, *Assistant in the Chemical Laboratories.*

Evening Engineering School; Co-Operative School of Engineering.

The right-hand man in the Chem. Lab. His willingness to do things and answer foolish questions from the students, has made him popular and well liked by all.

Residence: 137 Peterborough Street, Boston, Mass.

Elsie Louise Keegan, *Secretary to the Dean.*

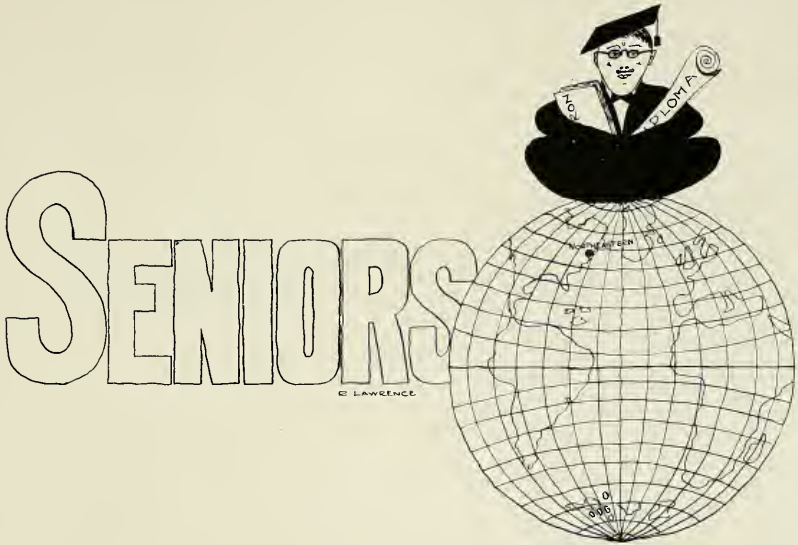
Milton High School, 1912; Underwood Typewriter Co.; Co-Operative School of Engineering.

"Elsie" is the favorite with all the students. Not because there isn't any competition, but because of her pleasing disposition.

"Light or dark, short or tall,
She loves to chatter with them all."

No one ever has a chance to feel lonesome when "Elsie" is around, for she always has a smile and a hearty greeting for us all.

Residence: 13 Congress St., Worcester, Mass.


SENIORS
DIPLOMA
NORTHEASTERN
10,000
C LAWRENCE

The Senior Class

Class of 1917

Edgar H. Curtis	*President*
Karle M. Rich	*Vice President*
Erving H. Clough	*Secretary*
Russell A. Preble	*Treasurer*

"Be original"

PRES. CURTIS

History of the Class of 1917

FOR four years the Class of 1917 has striven mightily to win for itself an honored name in the annals of our School. The spirit of class loyalty, the desire to make good, which was the aim of our class for the first three years, suddenly renewed its activities the beginning of the fourth year.

In every college activity our class has taken a prominent part. The athletic teams, the Glee Club, the societies and all other organizations number members of 1917 among their leaders.

The original class is a most appropriate name given us, for many new ideas have been originated in our last year. Other classes may accomplish more, but none will desire more strongly a bright, successful future for our Alma Mater than will the Class of 1917.

ARTHUR HOWARD BROWN, "Brownie" — Everett
Everett High — *Mechanical Engineering*

"You never can tell"

Brownie is one of those quiet, studious, stay late after school, early to bed, sort of a fellow; never known to miss a class in Thermo. But "Still water runs deep," and Brownie would bear watching after dark on the streets of Everett and Medford.

Baked Beans is my master; I shall not want. He maketh me to sit down at the table; he serveth me with Boston favorites. He restoreth my stomach; he feedeth me at the expense of my digestion, for my pleasure's sake.

Yea tho I eat and eat of beans, I am not satisfied. My stomach runneth over. Surely goodness and prosperity shall follow me all the days of my life, and I will dwell in Boston forever.

M.E. Society; Big 7; Rifle Club.

HARRY CIKINSKY, "Cy" — Roxbury
English High — *Civil Engineering*

"Rave on asbestos, you're fireproof"

Cy made himself famous by becoming an "expert" basketball player. This star first shone forth at the Annual Social, on the Senior team. Of course it wasn't his fault that the Faculty won, but——

The world knows nothing of its greatest men. Cy is one of them. The way these wonders spring up in three or four years is marvelous. If you don't believe it, we refer you to Cy.

Thesis: Design of Street and Highway Bridge for Grove Street Extension, Chelsea, Mass., with B. R. Switzer.

President of C. E. Society; Co-Op. A.A.; Rifle Club.

ERVING HARLOW CLOUGH, "Clough" — Medway
Medway High — *Civil Engineering*

"Labor omnia vincit"

Here we have a quiet, conscientious worker. Clough is one of the most respected of students in the class and always pays strict attention to business; never skipping a class to attend the "St. Jimmy." However, he is not only efficient in the classroom, but one of the best basketball players in the school. One of Clough's most outstanding characteristics is his extreme neatness in all his work, personal appearance, etc. In fact, the only thing that seems to disturb him, is to have a lock of hair off-side or a mudspot on his clothes.

Thesis: Design of Masonry Dam for Storage Reservoir in Charles River at Medway, Mass.

Recording Secretary of C.E. Society; Co-Op. A.A.; Secretary Senior Class; Captain, Basketball Team, '17; Rifle Club; Baseball.

EDGAR HAZEN CURTIS, "Curt" — Medford
Medford High — *Mechanical Engineering*

"Love—I know not what thou art"

Curt is a jovial fellow and does like to jolly. Clever talker, energetic student and a great worker for Northeastern. We have got to hand to Curtis as the most convincing advertising manager we ever saw.

He is President of the Senior Class and well worthy of such an honor. Curt is not a president in name only, but one in action and executive ability.

There isn't anybody who wants for a girl when he is around. Curtis furnished a fair percentage of the feminines for the Co-Op. Dance and he would do well to start a matrimonial bureau.

Thesis: Design of Weighing Machine for Shoe Nails.

President of M.E. Society; Advertising Manager, The Cauldron; Co-Op. A.A.; President Senior Class; Big 7; Glee Club; Rifle Club.

HERBERT FARWELL DICKSON, "Stub" — Harvard
Bromfield Academy — *Mechanical Engineering*

"He's a man, for a' that and a' that"

He is universally known as Stub because of his immense stature (5ft. 1in.). He is the star catcher of the baseball team and altho small, there is nothing that gets by him. He doesn't have to play baseball in order to *not* let things by him, for he sees many things that an ordinary person would not see. One great attraction for Stub in the Big City is the St. Jimmy and he has his seat there for the entire school year.

Treasurer of M. E. Society; Editor of Jokes and Grinds, The Co-Op.; Editor of Jokes, The Cauldron; Co-Op. A.A.; Big 7; Rifle Club; Captain Baseball Team.

CHANNING TURNER HARDING, "Dinkle durfer" — Medway
Medway High — *Chemical Engineering*

"The Venus of Manhood"

Turner once claimed through the columns of the Co-Op. that he was the most perfect man in Northeastern. We won't start any argument, so we'll stop right there.

A wash bottle in the hands of Turner was as good as a real pop-gun in William Hart's hands. Frequently when passing by a chem. lab. door, some poor redskin was picked off and somewhat moistened.

His lab. duster would easily sell for a high price in an antique shop or pass for Rip Van Winkle's coat. When Herrick left, Turner became the whole Senior Chemical Class, consequently we don't hear many disputes in that class.

Thesis: Design of a Plant for the Manufacture of Materials for the Chrome Tannage Process.

Ch. E. Society; Co.Op. A.A.; Basketball Team; Captain, '16; Student Council; Rifle Club.

JOHN RICHARD LAWRENCE, "Dick" — West Groton
Groton High — *Mechanical Engineering*

"Absence makes the heart grow fonder"

Dick comes down to College on the "Sweet Fern Territory" branch of the B. & M. from West Groton, and needless to say goes back over the same route many a week end. We think he will make a true and faithful husband, and providing his wife is not a big eater like himself, the H.C.L. will never bother him.

Dick is a very clever artist with pen or brush, and has furnished a great many nifty posters for College activities. Many of his sketches are true to life.

Thesis: Design and Construction of Small Drill Press, with G. B. Nutting.

M.E. Society; Cartoonist, The Co-Op.; Art Editor, The Cauldron; Co-Op. A.A.; Orchestra; Big 7; Glee Club.

SAMUEL MCCULLOUGH, "Mac" — Weston
Weston High — *Electrical Engineering*

"'Twas only a dream"

When we think of Mac, we always remember the time when a bunch of us returned from an inspection trip. The scene was laid in an elevated train. We were all *sitting down quietly*. At the next stop a peach of a peach got on and to our consternation, Mac offers his seat. We never thought it was in him; and then another fair one caught his eye and soon she was handing him *some* line of talk. That was the only time recorded that Mac ever departed from his usual bachelor ways.

Thesis: Design and Construction of Two Variable Reactances, with R. A. Preble.

E.E. Society; Class Editor, The Cauldron; Co-Op. A.A.

BENJAMIN NAIMON, "Bennie" — Holliston

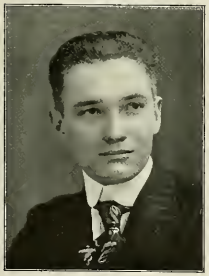
Medway High — *Civil Engineering*

"Had he been caught young, he might have been tamed"

Nemo of the famous form, large amount of hot air, etc., is one of the gamest fellows in the College, and believes in getting by on some one else's work. "For a' that," Bennie is a good sport and no quitter, a hard worker on the athletic teams in nearly every branch. Nothing was more important to Nemo than to catch the early train home in the afternoon. A little after 5 o'clock, his legs would automatically start walking towards the station and nothing could stop him.

Thesis: Design of Steel Roof Truss, with J. B. Otterson.

C.E. Society; Co-Op. A.A.; Baseball.



GERRY BRADLEY NUTTING, "Jerry" — Pepperell

Pepperell High — *Mechanical Engineering*

"Dainty little maiden, whither would thou wander"

Gerry started out to be one of the big men of the class, but he met his Waterloo in a feminine form. Now he spends most of his time, week-ends and sometimes mid-weeks, wearing out the rails between Boston and Lawrence. Too bad, Gerry, we are sorry for you.

Gerry enjoys the distinction of being the baby of the Senior Class. Mech. Drawing has no fears for him, being a shark at it. In the course of his college life, Gerry has learned to smoke, cut classes and wear sport clothes.

Thesis: Design and Construction of Small Bench Drill, with J. R. Lawrence.

Recording Secretary of M.E. Society; Class Editor, The Cauldron; Co-Op. A.A.; Big 7; Rifle Club.

JONAS BERNARD OTTERSON, "Otty" — Framingham
Framingham High — *Civil Engineering*

"I came, I saw, I conquered"

Now, take it from us, Otty is some boy. Willing to co-operate any time for the welfare of any project set forth. Otty is the main strength of the Senior Class, being the biggest of us all and none dare to cross his path. It seems strange how such a handsome student could have escaped the girls, but they don't worry him one bit. We have to congratulate Otty for his perfect behavior throughout his college career.

Thesis: Design of Steel Roof Truss, with B. Naimon.

Treasurer of C.E. Society; Co-Op. A.A.

RUSSELL ADELBERT PREBLE, "Preb" — Merrimac
Haverhill High; Merrimac High — *Electrical Engineering*

"She's the fairest of Ireland's fair daughters"

Preb's popularity has given him many tasks to perform, and in his energetic, straightforward way he has accomplished them wonderfully well. But we never could dope out how he happened to land the job as Treasurer of the Senior Class. If it were not for the careful watching of his room-mate, "Stub," we are sure that a detective would be needed to trail Preb. His voice was the one bright spot in his heart and many a gloomy hour of Thermo has he cheered by giving a certain Irish tune just before the lecture.

Thesis: Design and Construction of Two Variable Reactances with S. McCullough.

E.E. Society; Editor of Athletics, The Co-Op.; Editor of Athletics, The Cauldron; Co-Op. A.A.; Treasurer Senior Class; Rifle Club.

KARLE MARSHALL RICH, "K.M." — East Watertown
Tilton Seminary — *Civil Engineering*

"I care for nobody, no not I, 'till somebody cares for me"

Karle holds the long distance grouch record. He has the business ability to manage everything in College, except himself. Several things have a strong and peculiar attraction to K.M. such as Thermo, Phys. Lab. and Highways. In spite of all his vritues and deformities, Karle is one of the most popular students in the class. He was responsible for the success of the Co-Op. Dance, which is to be an annual affair, thanks to Rich.

Thesis: Design of Reinforced Concrete Highway Arch Bridge, with R. W. Stark.

Vice President of C.E. Society; Manager, Co-Op. A.A.; Vice President, Senior Class.

EBEN OSWELL SMITH, "Karapetoff" — Dorchester
Mechanic Arts High — *Electrical Engineering*

"Wisdom doth sit but lightly on his brow"

It seems almost impossible that a student can be a shark in Math., but E.O. is a bear at it, his only rival being Stienmetz. His great hobby is Electric Railways and he knows them inside out.

Smith used to be a very quiet fellow but since he became president of the Electrical Engineering Society there has been a marked change. He is one of the brightest students in the class and always tending to business.

Thesis: Design and Construction of an Eddy-Current Brake for a one-horse power Shunt Motor, with J. S. Viles.

President of E. E. Society; Co-Op. A. A.

AARON SPECTOR, "Spec" — Malden
Mechanic Arts High — *Civil Engineering*

"An empty vessel gives the greatest sound"

Spec represents one-half of the famous Cikinsky, Spector duo, famous for their continual fighting, crabbing and loud talking. It has become a common sight to witness an uprising, followed by a heated argument over some point in Structures. In spite of their frequent disputes, these two class-mates formed one of the closest friendships in the College. So close indeed, that it was no unusual thing for them to emerge from a bi-monthly with the same results and marks. Spec owes his high standing to his hard work.

Thesis: Design of Steel Roof Truss.

C.E. Society; Co-Op. A.A.

ROBERT WILLIAM STARK, "Bob" — South Boston
Mechanic Arts High — *Civil Engineering*

"Deserted"

Stark is one of the Seniors, a full fledged Co-Op., a true Northeastern and a lonesome student. South Boston undoubtedly surrendered a marvel when it turned Stark loose in this cold, cruel world. But he should worry, as he is getting his heart's desire, "a regular education." We are afraid that he missed his calling, for instead of being a Civil Engineer, he would have accomplished much more as a doctor for there is more money in it when the right party handles the job.

Quod erat demonstrandum.

Thesis: Design of Reinforced Concrete Highway Arch Bridge, with K. M. Rich.

Co-Op. A.A.; Orchestra; Rifle Club.

JESSE SUMNER VILES, "Squawk" — Weston
Weston High — *Electrical Engineering*

"A rare bird"

Squawk is noted for his constant good nature and everlasting smile. His favorite occupation was Mechanical Drawing, when the attraction for other things was not too great. Any sunny afternoon "Rube" could be seen bowling along in his R.C.H. with some Waltham "Queens." He knew the roads about Waltham like a clock and the wilds of Kendall Green had no terrors for him. We have got to give him credit for knowing so much about his R.C.H. While speeding along on the road, Squawk can do all kinds of tricks with the machine and without it.

Thesis: Design and Construction of an Eddy-current Brake for a one-H.P. Shunt Motor, with E. O. Smith.

E.E. Society; Co-Op. A.A.

BYRON RANDLETT SWITZER — *East Boston*
Westboro High — *Civil Engineering*

"I know I got more than my share"

This bright spot on the surface of the earth has a brilliant future ahead of him. He might be called versatile, for he plays poker, pool and marbles, altho not a star at either. Now what this brilliant future is, we can only guess. During the latter part of his Senior year, he has been plugging hard and staying in the drawing room late. Switz wants to make good for some reason or other. Guess we had better let our readers use their own imagination.

Thesis: Design of Street and Highway Bridge for Grove Street Extension, Chelsea, Mass., with H. Cikinsky.

C. E. Society; Rifle Club.

ARTHUR CLARK WATSON, "Watso" — Lynn
Lynn High — *Mechanical Engineering*

"Silence is Golden"

A very quiet fellow, never talking loud, but nevertheless we know had his own opinions and deep thoughts. When his evenings were not taken up by studying, we imagine he was in the company of a nice young lady, and to her he was "true blue."

He was a very lucky boy to get his picture in the catalog, and how he outshows everything else in the picture. We may hear any day of a trained codfish that will blow up ships put on the market by this coming Engineer.

Thesis: Test of an Eirnrude Motor, with P. F. Zwisler.

M.E. Society; Co-Op. A.A.; Big *7*; Treasurer of Rifle Club.

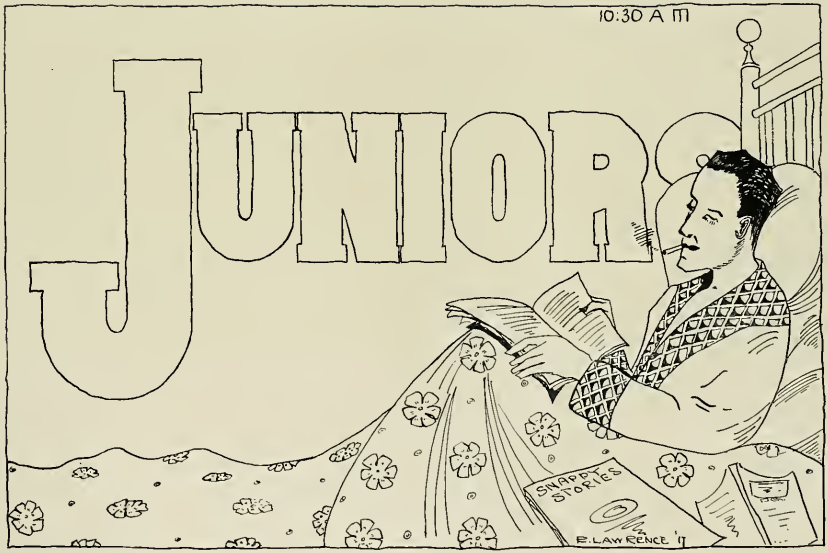
PERRY FREDERICK ZWISLER, "Rabbitt" — Willimansett
Chicopee High — *Mechanical Engineering*

"A Lion-hearted Warrior"

There is concentrated in this student an unlimited capacity for work. He also possesses the initiative to get things going and then push them through to a successful end. Mainly due to his push has this year's "Co-Op." and "Cauldron" been a success. Perry seldom wastes a minute of time which may account for his ability as an editor and student. We can't understand why Rabbitt has to go home every month or two. Nobody seems to be able to dope it out.

Thesis: Test of an Evinrude Motor, with A. C. Watson.

Vice-President of M.E. Society; Editor-in-Chief of "The Co-Op."; Editor-in-Chief of "The Cauldron"; Co-Op. A.A.; Orchestra; Big *7*; Glee Club; Rifle Club.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JUNIOR
SNAPPY STORIES
E. LAWRENCE '17

Third Year—Division A

Third Year—Division B

Class of 1918

Roland G. Porter	*President*
Raphael D. Cooper	*Secretary*
Lester S. Durkee	*Treasurer*

History

IN the fall of 1914 there entered into the "Co-op" a mighty throng of hoboes who presented themselves with the idea in their heads that perhaps some day they might possibly become engineers. This class was the most motley gathering of young men that was ever assembled. Naturally, in its midst there are "stars" and the reverse.

During the first year things went along quite smoothly, because of the fact that the "Freshies" had not yet begun to feel their own importance. Many dropped out along the wayside, leaving behind them their records of wondrous doings.

In the second year these blooming engineers began to feel the dignity (?) of their position; even the Chemical Course men. Examples of this were the remarks of "Pinky" Kerr and his crowd, who were accustomed to come into the "Lab." and say, "Well, if that fellow isn't ever going to hold a conference in Qualitative Analysis, I am going in and see 'Gerry' about it" Among the Mechanical Course men there was often an intense feeling of antagonism aroused by the fact that they could not appear quite as important as they thought they should.

Now comes the famous present year, leaving a mere handful of our former strong brigade. But still the core remains; the pick of the tribe. For novices, these men have "done themselves exceedingly proud." This certainly is a wonderful class; a class of the most varied originality, and one for which the best of success is desired, and to which the hearty support of the School is willingly offered.

Class of 1918

ATKINSON, FRANCIS R. — Kendall Green
Weston High School — Div. C—*Civil*
Co-op. A.A.

BRYANT, ALBERT R. — Petersham
Petersham High School — Div. B—*Mechanical*
M. E. Society

COHEN, MAXWELL — Roxbury
English High School — Div. C—*Civil*
C. E. Society; Glee Club

COOK, WALTER M. — Somerville
Somerville High School — Div. B—*Electrical*
Co-op. A. A.; Rifle Club

DURKEE, LESTER S. — South Hamilton
Hamilton High School — Div. A—*Mechanical*
M. E. Society; Co-op. A. A. manager; Treas. Junior Class.

EKLUND, ROLF E. — Medford
Mechanics Arts High School — Div. B—*Chemical*
Co-op. A. A.; Rifle Club

FREEMAN, HARRY J. — Dorchester
Mechanics Arts High School — Div. A—*Electrical*
E. E. Society; Orchestra; Co-op. A. A.

HOWE, MYRON A. — Framingham
Framingham High School — Div. A—*Civil*
C. E. Society

HUDSON, ELISHA S. — Jamaica Plain
West Roxbury High School — Div. C—*Chemical*
Ch. E. Society; President of Rifle Club

KERR, ARTHUR J. — Everett
Everett High School — Div. B—*Chemical*
Ch. E. Society; Co-op. A. A.; Rifle Club

LITTLEFIELD, BREWSTER E. — South Boston
Boston Latin School — Div. A—*Civil*
Chairman, Junior Prom.

MCLEISH, JOHN R. — South Boston
Mechanics Arts High School — Div. A—*Civil*
C. E. Society; Co-op. A. A.; Student Council

MEAGHER, JOHN J. — East Chelmsford
Lowell High School — Div. B—*Civil*

PELLEY, RALPH W. — Lynn
Lynn English High School — Div. B—*Electrical*

PORTER, ROLAND G. — Beverly
Beverly High School — Div. B—*Electrical*
Vice Pres. of E. E. Society; Ed. Dept's. The Co-op.; Ed. Dept's. The Cauldron; Pres. Co-op. A. A.; Rifle Club; Pres. Junior Class

SMITH, CLINTON A. — Plaistow, N. H.
Haverhill High School — Div. A—*Mechanical*
M. E. Society; Co-op. A. A.; Rifle Club

SMITH, NEIL S. — Dennisport
Dennis High School — Div. C—*Chemical*
Rifle Club

TAYLOR, RALPH S. — West Somerville
Somerville High School — Div. C—*Electrical*
E. E. Society; Co-op. A. A.; Rifle Club

THOMAS, NORMAN S. — Lewiston, Me.
Hebron Academy — Div. B—*Mechanical*
M. E. Society; Basketball Team; Co-op. A. A.; Sec. of Rifle Club

THOMPSON, EDWARD H. — Norwood
Norwood High School — Div. A—*Civil*
C. E. Society; Co-op. A. A.; Glee Club; Rifle Club; Baseball

WARD, DONALD G. — Portland, Me.
Portland High School — Div. A—*Electrical*
Treas. of E. E. Society

YOUNG, HAROLD C. — Westboro
Westboro High School — Div. A—*Chemical*
Ch. E. Society; Co-op. A. A.

SOPHOMORES
R. Lawrence '11

Second Year—Div. A

Second Year—Div. B

History of the Class of 1919

WHERE do we go next? Hey! who's that man wearing the pajama coat? I'll bet you a nickel you haven't got the nerve to go in the office and ask for a schedule card. I wonder if that big stout man in the laboratory teaches chemistry? Such were the utterances of that ungainly bunch of freshmen who besieged the Co-op. on the morning of the second Monday in September, 1915. They rounded us up in Room 451 and Mr. Geromanos explained the "red tape" which had to be gone through with before we were ready to sail ahead under full steam, and told us how much better the Co-op. School was than other similar institution. After registering at the Educational Office and parting with the summer's accumulation of coin, we proceeded to the supply room and got a padlock and a box of books. At that time we were perfectly innocent and were not aware of the very close relationship existing between a padlock and our books. That was one of the mysteries which the upper classmen told us would automatically clear itself up during the course of the year. The first week was pretty clear sailing, but work tightened up after that and we began to realize the virtues of a nine till five school day. Among the impressions of our first year's work which even time cannot blurr are those which had their origin in Math. and Physics I. Enough said. If the description of those eventful days was carried to five significant pages it couldn't equal the vivid picture which is now in the mind of everyone in our class. Our fellows were there with the bells on at both the Social and the Field Day at Riverside. We contributed two fellows to the basketball and four to the baseball team. After two weeks of head-scratching and filling up blue books with an unintelligible line of dope we bid farewell to the Co-op. and ventured forth into the summer, most of us in quest of hidden fortunes. Quite a few of us didn't find them however.

Well that summer brought about many strange things. First of all, when we came to try and get down to work again Mr. Geromanos gave one of the most appreciated talks which we had ever listened to. He told us that due to the epidemic of infantile paralysis we would be given two more weeks of freedom. And not a fellow in the room shed a tear. Undoubtedly the most vivid and outstanding transformation which came to pass during those summer months was that which took place on the countenance of our Thermo instructor. But this was as nothing compared to the topographical changes which our classmate W. F. B. experienced. We are wondering whether this summer will be such a banner year for the hay growers. Soon after getting down to the routine again a movement was set on foot to publish a monthly school paper. That movement gained great impetus in a few days and the result of it can be seen by glancing over your files of the Co-op's. Five of the men on the staff are from our class. So marked has been the success of the "Co-op." that the same staff of editors have undertaken the publishing of this year book. Needless to say our class was well represented at the Social and we had hardly a single bachelor to grace the walls of the Chateau at the memorable school dance.

Class of 1919

BAILEY, CHESTER F. — Amesbury
Chauncy Hall School — Div. C—*Civil*
Cor. Sec. of C. E. Society; Ed. Organizations, The Co-op.; Ed. Alumni, The Cauldron; Co-op. A. A.; Rifle Club

BIRD, WHITWORTH F. — Marlboro
Huntington Prep. School — Div. A—*Chemical*

BLACK, ROBERT D. — Whitehall, Md.
Sparks High School (Md.) — Div. C—*Chemical*
Rec. Sec. of Ch. E. Society; Orchestra; Asst. Bus. Man., The Co-op.; Bus. Man., The Cauldron; Co-op. A. A.; Glee Club; Baseball

BLACKWELL, LAWRENCE F. — Plainville
Plainville High School — Div. A—*Chemical*
Co-op. A. A.

BOWDEN, GEORGE W. — Beverly
Beverly High School — Div. A—*Electrical*

CLAPP, HAROLD I. — Framingham
Framingham High School — Div. A—*Mechanical*
M. E. Society; Glee Club

COLE, HERBERT N. — Pride's Crossing
Beverly High School — Div. B—*Mechanical*
Cor. Sec. of M. E. Society; Student Council; Rifle Club

CONKEY, JAMES O. — Hardwick
Hardwick High School — Div. B—
E. E. Society; Rifle Club

COOPER, RAPHAEL D. — Gloucester
Huntington Prep. School — Div. C—*Mechanical*
M. E. Society; Co-op. A. A.; Student Council; Rifle Club; Sec. Junior Class

EVANS, FORREST D. — Brighton
Huntington Prep. School — Div. C—*Electrical*
E. E. Society; Co-op. A. A.

FIELD, WILLIAM S. — Marlboro
Huntington Prep. School — Div. C—*Electrical*

FLOOD, FRANK L. — Framingham
Framingham High School — Div. A—*Civil*
C. E. Society; Basketball Team

FUWA, TYLER — Georgetown
Newburyport High School — Div. B—*Chemical*
Ch. E. Society; Co-op. A. A.; Student Council; Glee Club; Rifle Club

GREENBERG, SAMUEL — Dorchester
Huntington Prep. School — Div. C—*Chemical*
Ch. E. Society; Co-op. A. A.

HAVEN, CLYDE E. — West Hanover
Hanover High School — Div. C—*Mechanical*
M. E. Society; Rifle Club

HAWES, ARTHUR R. — Sudbury
Sudbury High School — Div. C—*Chemical*
Vice Pres. of Ch. E. Society; Co-op. A. A.; Baseball

HOSMER, MERTON A. — Concord Junction
Concord High School — Div. A—*Chemical*
Ch. E. Society

HOUSE, LAWRENCE C. — Hanover
Hanover High School — Div. C—*Civil*

JORDAN, WENDALL F. — Peabody
Peabody High School — Div. C—*Mechanical*
M. E. Society; Co-op. A. A.

KENDALL, GEORGE H. — Newburyport
Newburyport High School — Div. C—*Chemical*
Ch. E. Society

LOCKE, RICHARD B. — South Boston
English High School — Div. B—*Civil*
C. E. Society; Co-op. A. A.; Glee Club

MCCOMB, WILLIS L. — North Chelmsford
Chelmsford High School — Div. A—*Chemical*
Ch. E. Society; Co-op. A. A.

MCLEOD, JOHN M., JR. — Dorchester
Boston High School of Commerce — Div. C—*Chemical*
Ch. E. Society; Literary Editor, The Co-op.; Ed., Societies, The Cauldron; Co-op. A. A.; Glee Club

METZGER, WILLIAM L. — Boston
Div. C—*Civil*
C. E. Society; Co-op. A. A.

MUNT, GEORGE E. — Whitinsville
Northbridge High School — Div. C—*Electrical*
Sec. of E. E. Society; Basketball Team; Sec. Co-op. A. A.; Baseball

PLUNKETT, RALPH A. — Dorchester
Mechanics Arts High School — Div. A—*Civil*

PRESTON, HIRAM W. — Beverly
Beverly High School — Div. B—*Electrical*

PURINTON, CYRUS L. — Bowdoinham, Me.
Bowdoinham High School (Me.) — Div. A—*Electrical*

RICHARDSON, ELMER H. — Reading
Reading High School — Div. A—*Civil*
Co-op. A. A.

SARGENT, SHAW D. — Newburyport
Newburyport High School — Div. A—*Electrical*
E. E. Society

SEAVEY, HERBERT T., JR. — Stoughton
Stoughton High School — Div. A—*Electrical*
E. E. Society; Rifle Club

STENSRUD, CLARENCE B. — Beverly
Beverly High School — Div. B—*Civil*
C. E. Society; Sec. Co-op. A. A.; Glee Club

TRACHTENBERG, HARRY — Roxbury
Div. C—*Civil*
C. E. Society; Co-op. A. A.

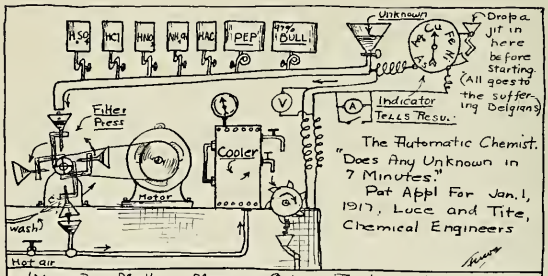
Travis, Dwight P. — Framingham
Framingham High School — Div. A—*Mechanical*
M. E. Society; Co-op. A. A.

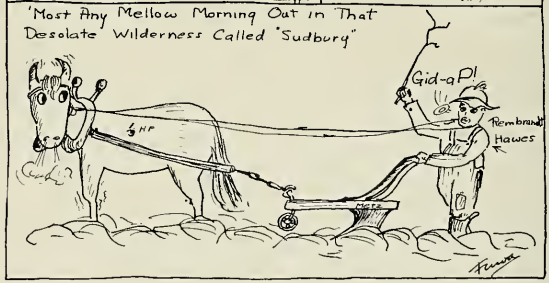
Vitalini, Walter R. — Milford
Milford High School — Div. A—*Mechanical*

Waugh, Stanley P. — East Boston
Mechanics Arts High School — Div. A—*Chemical*
Treas. of Ch. E. Society; Ed. Calendar, The Co-op.; Ed. Calendar, The Cauldron; Co-op. A. A.; Glee Club

Wells, William — Brockton
Brockton High School — Div. B—*Civil*
Co-op. A. A.

Willard, Leslie M. — Malden
Somerville High School — Div. B—*Civil*
Rifle Club


Unknown
Drop a jit in here before starting. (All goes to the suffering Belgians)
Indicator Tells Resu.
Filter Press
Cooler
Motor
Wash
Hot air
The Automatic Chemist. "Does Any Unknown in 7 Minutes." Pat Appl For Jan. 1, 1917. Lucc and Tite, Chemical Engineers



FRESHMEN
E. LAWRENCE '17

First Year—Div. A

First Year—Div. B

Class of 1920

History

THE entering class this year was larger in numbers, greater in mental capacities and contained more, awe-inspiring, lovable young cherubs than any other class in the past and never will there be such a brilliant class of men enter after us. It's impossible—we are just simply "It." We started 69 strong, and although a few have left our ranks we still have a select 52 ready to enter the realms of the upper classmen next year.

Of course, we were a little timid at first, as all newcomers are, and our examinations last June were not taken under ordinary conditions in the least. It seems to us that a Junior or foolish Sophomore ought to have more heart than to send us way down the basement and bother the janitor for a left-handed monkey wrench, especially when we are supposed to be on our good behavior and need every ounce of push we have for answering some of the professors' questions. We got by just the same; didn't we—yes, and we will have to admit that when your dean's stenographer first asked us to appear before H. W. for a personal interview we were a little, just a little scared, but now what freshie is not proud of the opportunity to walk with his head high in the air, through the office and into the little den beyond.

This has been a very profitable year for us all and we are sure your brother students will overlook our rudeness and overbearing ways and just consider that when you were in our position you acted little better. The more we go to school it seems, the less we know. But maybe, this is a case like the wise man. It is said of the wise man, "He knows he knows not." We hope and sincerely wish that all other entering students will have as pleasant and profitable a first year as we have had.

The Class of 1920

ATKINSON, SYDNEY M. — Natick
Natick High School — Div. C—*Chemical*
(W. P. T. I.—1 yr.)
Ch. E. Society; Co-op. A. A.; Baseball

AURSLANIAN, MESHAC H. — Newburyport
Newburyport High School — Div. C—*Electrical*
E. E. Society

BAGLOE, HARRY M. — West Mansfield
Mansfield High School — Div. A—*Civil*
C. E. Society

BAKER, DAVID A. — Boston
Mechanics Arts H. S. — Div. C—*Chemical*
Rifle Club

BELL, THOMAS J. — Newburyport
Newburyport High School — Div. B—*Electrical*
Co-op. A. A.

BOYER, HAROLD A. — Middlefield
Chester High School — Div. C—*Civil*
C. E. Society

BURRELL, LAWRENCE K. — East Bridgewater
East Bridgewater High School — Div. C—*Chemical*
Co-op. A. A.; Baseball

BUTTER, MAX R. — Dorchester
English High School — Div. C—*Chemical*
Ch. E. Society; Rifle Club

BUTTERFIELD, HENRY F. — Ayer
Ayer High School — Div. A—*Electrical*
Co-op. A. A.

CAPEN, BERNARD H. — Stoughton
Stoughton High School — Div. B—*Chemical*
Baseball

CAULKINS, CHARLES W. — Littleton
Littleton High School — Div. B—*Chemical*
Co-op. A. A.

COOK, HORACE S. — Hamilton
Hamilton High School — Div. A—*Mechanical*
Co-op. A. A.

CRAFT, MAX R. — Dorchester
Dorchester High School — Div. A—*Chemical*
Ch. E. Society; Co-op. A. A.

DOLIBER, IRVING E. — Marblehead
Marblehead High School — Div. A—*Civil*

FADER, JAMES H. — Cambridge
Rindge Technical High School
Div. B—*Mechanical*

FAGAN, PHILIP M. — Roxbury
English High School — Div. C—*Civil*
Co-op. A. A.; Rifle Club

FOWLER, ALBERT E., JR. — Newburyport
Newburyport High School — Div. B—*Chemical*
(Hunt Prep. School)

Fuller, Nelson M. Boston
Winthrop High School Div. B—*Mechanical*
Treas. of Co-op. A. A.; Rifle Club

Grinnell, Elliott S. Plainville
Dean Academy Div. C—*Chemical*

Hyde, Russell N. Swampscott
Lynn Classical High School Div. B—*Mechanical*
Orchestra

Jackson, Joseph H. Auburndale
Weston High School Div. A—*Electrical*
E. E. Society

Kennedy, Edwin C. Dorchester
High School of Commerce Div. B—*Chemical*
Cor. Sec. of Ch. E. Society

Kennedy, Henry L. Medfield
Medfield High School Div. C—*Mechanical*

Keith, James B. Elmwood
East Bridgewater High School Div. C—*Chemical*
Ch. E. Society; Co-op. A. A.

Knowlton, James A. Melrose
Huntington Prep. School Div. C—*Civil*
C. E. Society; Basketball Team; Co-op. A. A.; Baseball

Krone, Lester F. Boston
Huntington Prep. School Div. B—*Chemical*
Ch. E. Society; Rifle Club

Leach, Frank P. Phippsburg, Me.
Chicopee High School Div. B—*Electrical*
E. E. Society; Rifle Club

Levine, Philip Chelsea
Chelsea High School Div. B—*Civil*
Rifle Club

Luce, Willis C. Vineyard Haven
Tisbury High School Div. A—*Chemical*
(W. P. T. I. 1 yr.)
Ch. E. Society; Co-op. A. A.; Glee Club; Rifle Club

Madigan, Leo W. Harvard
Bromfield High School Div. A—*Civil*

Manning, Arthur L. Holliston
Holliston High School Div. B—*Mechanical*
Co-op. A. A.; Rifle Club

Martell, Charles S. Medford
St. John's Prep. School Div. A—*Electrical*
Basketball Team; Co-op. A. A.

Mathews, Roger E. Cambridge
Rindge Technical High School Div. A—*Civil*
Rifle Club

McKay, George H. Dorchester
Dorchester High School Div. B—*Civil*

Mills, Kenneth N. South Manchester, Conn.
South Manchester High School
Div. B—*Electrical*
Orchestra; Co-op. A. A.

NICHOLLS, RAYMOND F. — Williamsburgh
Gunnery Prep. School — Div. A—*Electrical*

NICKERSON, EDGAR W. — Beverly
Beverly High School — Div. B—*Electrical*

OLIVER, JOHN R. — Dexter, Me.
Div. C—*Mechanical*

OLSON, FREDERICK F. — Boston
English High School — Div. B—*Mechanical*

PARKER, BENJAMIN — Weston
Weston High School — Div. C—*Civil*
(M. I. T. 1 yr.)
C. E. Society; Rifle Club

PIPER, MAURICE W. — Marlboro
Marlboro High School — Div. B—*Chemical*
Ch. E. Society; Co-op. A. A.

PREBLE, EDWIN G. — Beverly
Beverly High School — Div. B—*Electrical*

PRIVAS, HYMAN S. — East Boston
Huntington Prep. School — Div. A—*Chemical*
Ch. E. Society

RICHARDSON, EDWARD M. — Salem
Salem High School — Div. A—*Civil*
C. E. Society

RICHARDSON, GEORGE J. L. — Dorchester
Dorchester High School — Div. B—*Electrical*

ROBBINS, PERCY A. — Elmwood
East Bridgewater High School — Div. B—*Chemical*
Ch. E. Society; Co-op. A. A.; Baseball

ROBINSON, DEXTER T. — Roslindale
Mechanics Arts High School — Div. A—*Electrical*

SMITHIES, ARTHUR E. — Chester
Chester High School — Div. C—*Electrical*
E. E. Society; Orchestra; Bus. Man, The Co-op.; Man. Ed., The Cauldron; Student Council

TAYLOR, ARTHUR R. — Framingham
Framingham High School — Div. B—*Chemical*
Ch. E. Society; Co-op. A. A.

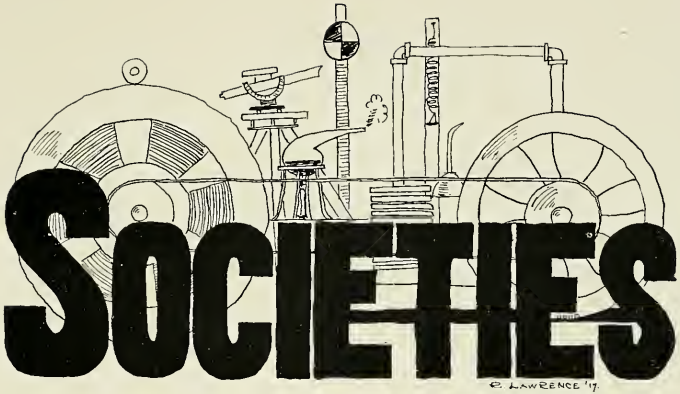
THOMPSON, OSCAR F. — Norwood
Norwood High School — Div. A—*Mechanical*
Basketball Team; Co-op. A. A.; Rifle Club; Baseball

TOOMEY, JOHN W. — Pride's Crossing
Beverly High School — Div. A—*Electrical*
Co-op. A. A.; Baseball

WALDIE, THOMAS — Beverly
Beverly High School — Div. A—*Electrical*

WHEELER, CLIFFORD E. — Malden
Malden High School — Div. B—*Chemical*
Orchestra; Treas. of Co-op. A. A.

WHEELER, WILLIAM S., JR. — Dorchester
Dorchester High School — Div. A—*Chemical*
Ch. E. Society; Co-op. A. A.


SOCIETIES
E. LAWRENCE '17.

Civil Engineering Society

Civil Engineering Society

Officers

Harry Cikinsky, *President*
Karl M. Rich, *Vice President*
Jonas B. Otterson, *Treasurer*
Erving H. Clough, *Recording Secretary*
Chester F. Bailey, *Corresponding Secretary*

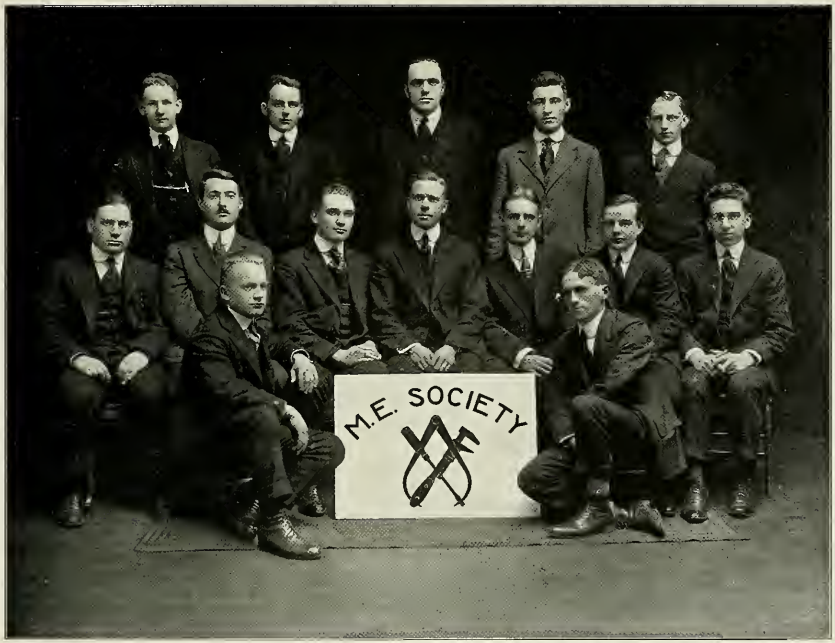
Members

Harry M. Bagloe
Chester F. Bailey
Harold A. Boyer
Harry Cikinsky
Erving H. Clough
Maxwell Cohen
Angus D. Douglas
Frank L. Flood
Samuel Goldman
Myron A. Howe
James A. Knowlton
Richard B. Locke
John R. McLeish
William L. Metzger
Myer Miller
Charles F. Mitchell
Benjamin Naimon
Thomas E. Nelson
Jonas B. Otterson
Benjamin Parker
J. Franklin Pierce
Karl M. Rich
Elmer H. Richardson
Aaron Spector
Clarence B. Stensrund
Byron R. Switzer
Edward H. Thompson
Harry Trachtenberg

The Civil Engineering Society was organized in March, 1916, through the efforts of Professor Carl S. Ell. The aim of this Society is to further the knowledge and interest of the students in the civil engineering course by presenting the practical side through the agency of men of considerable and varied experience. This has been done by inviting men, who are the first in their field, to give lectures, illustrated or otherwise, to the members of the Society. Some of the most interesting talks were given by Mr. C. L. Downey, of the New England Structural Steel Company and by Professor C. M. Spofford of the Massachusetts Institute of Technology. Mr. Downey's talk dealt with structural steel from the time it left the furnace to the time when it was swung into position as a girder, or some portion of a building or bridge. Among some of his most vivid descriptions was that of the work of the engineers in foreign countries. He described how the engineers directed the native labor without a great deal of unnecessary talk. Professor Spofford's talk dealt almost wholly with the ethical side of engineering. He pointed out very clearly to the members of the Society the necessity of doing things as they should be done, although he did not state it in those exact words. The point which he seemed most anxious to drive home was that honesty and integrity are the best friends in business in the long run.

Among other things the Society plans trips to plants and different points of interest to the members. One of the most enjoyable trips was the one to the plant of C. L. Berger & Sons, manufacturers of surveying instruments and instruments of precision.

Each month the Society holds a smoker or some form of entertainment. Another feature of the Society is the bowling team. This team promises to be one of the best bowling teams in the college.


M.E. SOCIETY

Mechanical Engineering Society

Officers

Edgar H. Curtis, *President*
Perry F. Zwisler, *Vice President*
Herbert M. Cole, *Corresponding Secretary*
Herbert F. Dickson, *Treasurer*
Gerry B. Nutting, *Recording Secretary*

Members

John Berquest
Arthur H. Brown
Albert R. Bryant
Harold I. Clapp
Herbert M. Cole
Raphael D. Cooper
Edgar H. Curtis
Ruell Davis
Herbert F. Dickson
Lester S. Durkee
Clyde E. Haven
E. Earle Johnson
Wendell F. Jordon
J. Richard Lawrence
Gerry B. Nutting
Clinton A. Smith
Oscar Solomon
Norman S. Thomas
Dwigiit P. Travis
Arthur C. Watson
Perry F. Zwisler

Honorary Members

Mr. Hercules W. Geromanos
Mr. Harold C. Mabbott

THE Mech. Eng. Society of Northeastern College was a new project started last fall by Assistant Professor H. C. Mabbott and a few seniors. It followed quickly in the footsteps of the other two Societies, but went one step further; it eliminated the freshmen from entering the Society, holding out a bait for the second year.

The Society decided to ask Mr. H. W. Geromanos, the Dean, to speak to the members at the first meeting. His talk was extemporaneous, being a humorous account of a personal experience, which he had at his summer camp in Maine. The point, which he seemed most anxious to drive home, was that fellows should be able to get a grip on themselves when it became necessary to do it.

Another speaker was Prof. George W. Swett of the Massachusetts Institute of Technology, who gave an illustrated lecture on the comparative warmth of cotton and woolen blankets. He stated in his lecture that after extensive research work, Professor Haven and he had found that a good grade cotton blanket held about ninety per cent of the warmth that a woolen blanket did. It is needless to state that in years to come the members of the Society will buy cotton blankets.

The next lecture was given by Mr. William H. Perkins of Walker & Pratt Manufacturing Company of Watertown on the subject "From Mine to Store." He traced the iron from the mine to the foundry, and thence on to the finished product. In his lecture he emphasized the efficiency of the handling and the transportation of the raw material.

The members of the Society have taken many trips to several industrial plants, including the B. F. Sturtevant Co. of Hyde Park, the Metz Automobile Co. of Waltham, and the Walker & Pratt Mfg. Co. of Watertown. At all the plants visited the members were treated in a most courteous manner, and at the same time received much valuable information.

There are plans being put into effect whereby this Society may become affiliated with the American Society of Mechanical Engineers.

AT THE MEETING OF THE M E SOCIETY THE OTHER NIGHT, MR MABBOTT TRIED TO PUT "THE QUENCHER" OUT OF BUSINESS.

Electrical Engineering Society

Electrical Engineering Society

Officers

Eben O. Smith, *President*

Roland G. Porter, *Vice President*

Donald G. Ward, *Treasurer*

George E. Munt, *Secretary*

Members

Meshac H. Aurslanian
James O. Conkey
Forrest D. Evans
Harold J. Freeman
J. Arthur Jackson
Frank P. Leach
Samuel McCullough
George E. Munt
Russell A. Preble
Roland G. Porter
Shaw D. Sargent
Herbert T. Seavey, Jr.
Eben O. Smith
A. Earle Smithies
Ralph S. Taylor
Jesse S. Viles
Donald G. Ward

Honorary Members

Mr. Hercules W. Geromanos
Mr. W. Lincoln Smith
Mr. Carl S. Ell
Mr. Calvin P. Eldred

THE Electrical Engineering Society of Northeastern College was formed in October, 1916, through the efforts of the members of the Electrical Engineering Department. The aim of the Society is to increase the knowledge of its members, and to train them in the part of presenting their ideas and arguments in a convincing manner. Toward this end, each alternate meeting is kept open for half-hour discussions of selected subjects by two members, followed by a general one. At the other meetings outside speakers, men of prominence in the profession, are invited to lecture on subjects selected from their own experience.

Several meetings have been held this year, and have all been a great success. Some of the lectures given were the following: An illustrated lecture on "Low Tension Cable Testing," by Mr. Eben O. Smith; a demonstrated lecture on the "Construction and Operation of the Condit Company's Type A, Time Limit Relay," by Russell A. Preble; another lecture was the one on "High Potential Cable Testing," by Mr. H. C. Hamilton of the Edison Standardizing and Testing Laboratory.

All the members of the Society have the privilege of becoming student members of the American Institute of Electrical Engineers, and also the privilege of attending the meetings of the Boston Section.

Chemical Engineering Society

Chemical Engineering Society

Officers

Clifford K. Herrick, *President*
Arthur R. Hawes, *Vice President*
Robert D. Black, *Recording Secretary*
Stanley P. Waugh, *Treasurer*
E. Carey Kennedy, *Corresponding Secretary*

Members

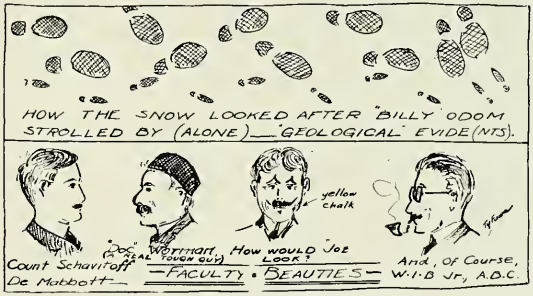
Sidney M. Atkinson
Robert D. Black
Max R. Butter
Max Craft
Lawrence H. Constantine
Rolf E. Eklund
Tyler Fuwa
Samuel Greenberg
C. Turner Harding
Arthur R. Hawes
Clifford K. Herrick
Merton A. J. Hosmer
Elisha S. Hudson
G. Herbert Kendall
E. Carey Kennedy
James B. Keith
Arthur Kerr
Lester F. Krone
Willis C. Luce
Willis L. McComb
John G. McLeod, Jr.
Maurice W. Piper
Hyman S. Privas
Percy A. Robbins
Arthur R. Taylor
Stanley P. Waugh
William S. Wheeler
Harold C. Young

The Cauldron, 1917

This Society was organized the 27th day of October, 1916, for the purpose of bringing together the students in the chemical engineering course, and also to make them better acquainted with each other, and to bring them into closer touch with the outside world. It was also organized with the end in view of obtaining the latest facts in chemistry from men who are best able to present these facts. Another object was to be able to obtain the latest periodicals and books pertaining to chemistry and chemical engineering which might be of interest to the members of the Society.

One of the main features of the Society is its monthly meetings. These meetings are held in either the social supper room or the parlors of the College. They are generally socials of one form or another, often a smoker, preceded by a lecture. However, the most important feature of the meeting is the speaker, who is most always an outside man of considerable importance. This is not always true, as sometimes some of the members are assigned topics to discuss and investigate at length.

The first given before the Society was on November 2, 1916, "Fuels and Flue Gases," by Professor Gill of the Massachusetts Institute of Technology. He described in detail the different fuels and their varied uses and qualities, also the flue gases, their qualities, advantages, and disadvantages. The next lecture was given by Mr. Scott of the Arthur D. Little Co., on "Paper Making." This was followed by talks from two of the members at the next meeting, Mr. Fuwa and Mr. Herrick, the former giving the "Relation of the Chemist to the Manufacturer," and the latter giving "Vocational Diseases." This was followed by a lecture by Dr. Wing of the Boston Consolidated Gas Company on "Gas Products." At the next meeting Dr. Williams of the Massachusetts Institute of Technology gave a lecture on "Alloys," illustrating it by means of lantern slides. He showed the structure of various alloys as they looked under the microscope, and also described the peculiarities of expansion and contraction which certain metals possess. The last meeting was well attended, because of the fact that Dr. Spear is so well known to the members of the Society. His subject was "Colloidal Chemistry," which he demonstrated with a photographic microscope and by means of experiment.


HOW THE SNOW LOOKED AFTER "BILLY" ODOM STROLLED BY (ALONE)—"GEOLOGICAL" EVIDE(NTS).
yellow chalk
Count Schavitoff De Mobbett—
"Doc" (a REAL WOPPIAN, LOVER GUY)
—FACULTY
How would Joe LOOK?
—BEAUTIES—
And, of Course, W.I.B. Jr, A.B.C.

Compliments of

THE ALUMNI

Co-op Alumni Association

DURING the past year the need of an Alumni Association has been strongly felt. Although the idea is not a new one, yet it has been brought home more forcibly in the last few months. Scarcely a week has gone by without some inquiry as to where is so and so, and what is he doing, and can't we have a get-together and talk over old times. It has been surprising to see to what extent the follows have lost track of each other.

Moreover the formation of an Association would be a decided advantage to the School. Say what you will, there is nothing that can be more of an advertisement, nothing that can spread the name of the School farther than an energetic and wide awake alumni. But to be wide awake and energetic, and to be up-to-date the graduates must be kept in touch with what is going on. The school paper is doing its part. An alumni association should do its part.

To this end, a canvas has been made of former graduates and students and the following temporary officers have been selected to make plans for a permanent organization.

President—JOHN R. LEIGHTON, '14, 316 Huntington Avenue, Boston.

Secretary—FRED E. WEBBER, '15, 15 Woodford St., Roxbury.

Treasurer—FRANK X. SLANE, '14, 6 Sagamore St., Dorchester.

Advisory Members—JOHN BERQUIST, '16, 259 Massachusetts Avenue, Arlington; EVERETT N. MONTAGUE, '16, 17 Cottage St., Concord Junction, Mass.

It is hoped that those who have not yet communicated with any of the above will do so at once. Send in suggestions; let them know your ideas, for it is only by the hearty co-operation of all, that the Alumni Association can be made and will be made a success.

Class of 1913

Girard, Leon	49 Creighton St., No. Cambridge	With the Ford Motor Co.
Jones, Adelbert L.	173 Lynn Fells Parkway, Melrose	With the Boston & Maine Railroad
Keene, Stephen A.	Care of The International Engineering Corporation, Malden	Member of The International Engineering Corporation
Driscoll, D. Vincent	39 Prospect Street, Malden	Member of The International Engineering Corporation

Class of 1914

Ellis, Paul M.	Manilla, Philippine Islands	2d Lieut., 27th Inf. U.S. Army
Leighton, John R.	100 Winslow Street, Everett	Instructor in Civil Engineering, Northeastern College
Slane, Frank X.	6 Sagamore St., Dorchester	Chief Draftsman, Aspinwall and Lincoln
Stark, Harry W., Jr.	22 Hutchins St., Danielson, Conn.	Construction Engineer, The Aberthaw Construction Co.
Buck, Robert E.	668 Wellington St., Sault St. Marie, Ont.	With the Spanish River Pulp and Paper Co.
Cooper, Alton R.	Barber St., Medway, Mass.	Chief Draftsman The Coffin Valve Co.
Norton, John G.	Fajardo, Porto Rico	Instructor
Wright, Ashley	29 West Central St., Natick, Mass.	With the Boston & Albany Railroad
Foster, Frederick S.	88 Oak St., Dorchester	With the Boston Elevated Railway Co.

Haynes, Earle S.	32 Newport St., Dorchester	With the Boston Elevated Railway Co.
Hill, Ralph J.	Southbridge, Mass.	Supervisor of the Industrial Course, Southbridge High School
Slotnick, Hyman	53 Chatham Road, Everett	With the United Shoe Machinery Co.
Faulkner, John J.	46 Deane St., Gardiner, Me.	Electrical Engineer

Class of 1915

Brown, David M.	Hingham, Mass.	Surveyor
Boyce, A. Kendrick	11 Banks St., West Somerville	With the Boston & Maine Railroad
Leland, Ralph H.	416 Towando St., White Haven, Pa.	With the Interstate Commerce Commission
Robinson, Roy	49 Bartlett St., Malden	With the Interstate Commerce Commission
Webber, Fred	496 E. 6th St., So. Boston	With the Boston Transit Commission
Woodward, Oscar L.	648 E. 5th St., So. Boston	With Aspinwall and Lincoln
Berquist, John	259 Massachusetts Ave., Arlington, Mass.	With Mead, Morrison & Co.
Curtis, J. W.	16 Avon St., Cliftondale, Mass.	With the Bay State Street Railway Co.
Davis, Ruel L.	Beverly Farms, Mass.	With the American Steam Gage & Valve Co.
Leavitt, Henry J.	22 Chapel St., Augusta, Me.	With the Hancock Educational Association
Rosen, Benjamin	87 West Cedar St., Boston	With the Boston Consolidated Gas Co.

Blume, Hyman	10 Laconia St., Boston	With the Boston Elevated Railway Co.
Gove, Leland	Liberty St., Randolph, Mass.	With Tenney Co.
Price, A. B.	8 Wellington St., Boston, Mass.	With the Nason Electrical Co.
Steele, Harold	3 Elm Place, Marblehead	With the Naumkeag Manufacturing Co.
Sullivan, Robert	21 Sixth St., Cambridge	With the Edison Electric Illuminating Co.

Class of 1916

Fidler, Robert E.	93 Henry St., Charlestown	With Stone & Webster
Montague, Everett N.	17 Cottage St., Concord Junc.	With the Mass. Land Court
Miller, Myer	28 Angell St., Dorchester	With the National Engineering Corporation
Marnell, Harold F.	192 Quincy St., Dorchester	With the Massachusetts Highway Commission
Pickernell, Harry S.	128 Water St., Clinton, Mass.	With the Metropolitan Water Commission
Pitman, Irving G.	20 Home St., Peabody	With the Holtzer Cabot Co.
Simard, Henry A.	9 Barton St., Waltham, Mass.	With the Boston & Maine Railroad
Sawyer, Gilbert B.	9 Sprague St., Malden	With the Crandell Construction Co.
Thompson, A. W.	7 Hillside Ave., Norwood, Mass.	With the Interstate Commerce Commission
Brown, Alton S.	Foxboro, Mass.	With the Foxboro Instrument Co.
Johnson, Earle E.	29 Winthrop Ave., Beverly	With the United Shoe Machinery Co.

Costello, Charles	93 West St., Malden	With the New England Appliance Co.
Dearborn, Arthur E.	38 Pembroke St., Medford	With the Boston Elevated Railway Co.
Kuehl, Adolph	32 Pinkert St., Medford	With the Boston Elevated Railway Co.
Long, Charles C.	316 Huntington Ave., Boston, Mass.	Attending the Mass. Inst. of Technology
Whittaker, Horace	335 Huntington Ave., Boston, Mass.	2d Lieutenant, U.S. Army
Churchill, Leonard R.	122 Chestnut St., Springfield, Mass.	With the Milton Bradley Co.
McGrath, Robert L.	83½ Proctor St., Salem, Mass.	With the United Shoe Mach. Co.
Sweeney, Edmund	5 St. William St., Dorchester	With the Boston Consolidated Gas Co.

Former Students

Gale, Harold P,	321 Main St., Amesbury	U.S. Government Postal Service
Goldman, Sam	86 Lawrence St., Dorchester	Draftsman New England Structural Co.
Johnson, A. Ture	27 Topliff St., Dorchester	Attending the Mass. Inst. of Technology
Roundy, Richard A.	26 Federal St., Beverly	With the United Shoe Machinery Co.
Solomon, Oscar	19 Brook St., Brookline	Efficiency Dept., Boston Woven Hose and Rubber Co.
Rice, E. Austin	8 Reddy Ave., Hyde Park	Electrical Engineer

The Cauldron Board

The Board.

Editor in Chief.	Perry F. Swisler
Managing Editor.	A. Earle Smithers.
Business Manager.	Robert O. Black.
Advertising Manager.	Edgar H. Curtis
Art Editor.	J. Richard Lawrence.
Editors of Classes.	Samuel McCullough
	Gerry B. Nutting.
Editor of Athletics.	Russell A. Preble.
Editor of Societies.	John G. McLeod, Jr.
Editor of Jokes.	Herbert G. Dickson.
Editor of Departments.	Roland G. Porter.
Editor of Calendar.	Stanley P. Waugh.
Editor of Alumni.	Chester F. Bailey.

E. LAWRENCE '17

The Co-op Orchestra

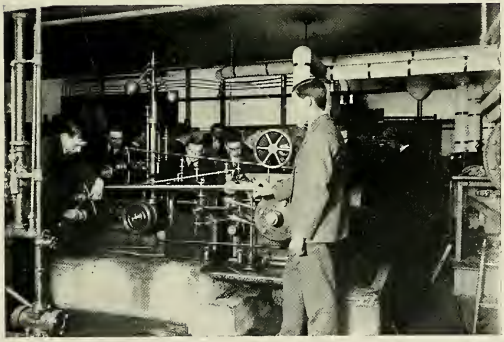
J. Richard Lawrence, *Leader*

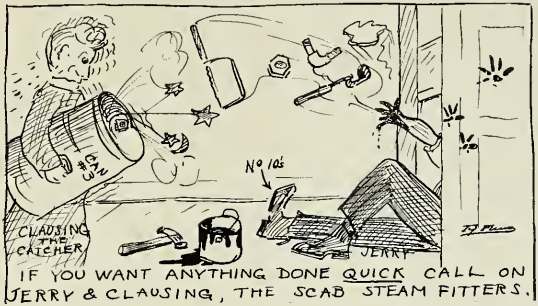
Perry F. Zwisler	*Pianist*
Robert D. Black	*Violin*
Harry J. Freeman	*Violin*
Clifford E. Wheeler	*Violin*
A. Earle Smithies	*Viola*
Robert W. Stark	*Cornet*
J. Richard Lawrence	*Trombone*
Russell N. Hyde	*Flute*
Kenneth N. Mills	*Drums*

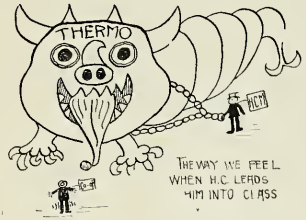
The Student Council

Student Council

Raphael D. Cooper
Herbert N. Cole
Tyler Fuwa
Channing T. Harding
John R. McLeish
A. Earle Smithies







7

The Big 7

Arthur H. Brown
Edgar H. Curtis
Herbert F. Dickson
J. Richard Lawrence
Gerry B. Nutting
Arthur C. Watson
Perry F. Zwisler

The Co-op Glee Club

Director, Mr. Harold C. Mabbott

Robert D. Black
Edgar H. Curtis
Maxwell Cohen
Joseph A. Coolidge
Harold I. Clapp
Tyler Fuwa
Clifford K. Herrick
Richard B. Locke
Clarence B. Stensrud
Willis C. Luce
J. Richard Lawrence
Edward H. Thompson
John G. McLeod, Jr.
Stanley P. Waugh
Perry F. Zwisler

Athletic Association Officers

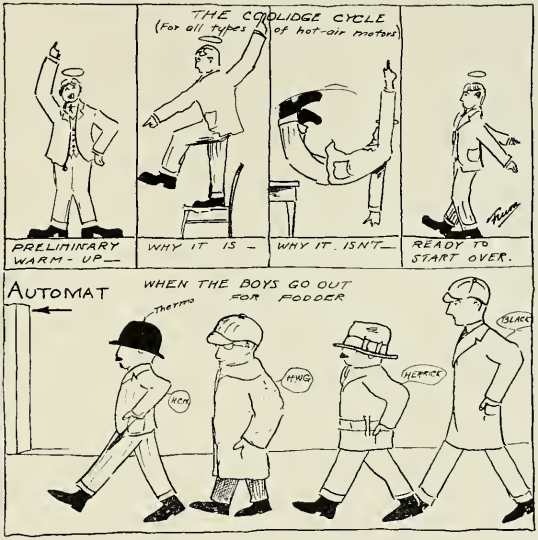
Co-op Athletic Association

President, Roland G. Porter

Secretaries, Clarence B. Stensrud, George E. Munt

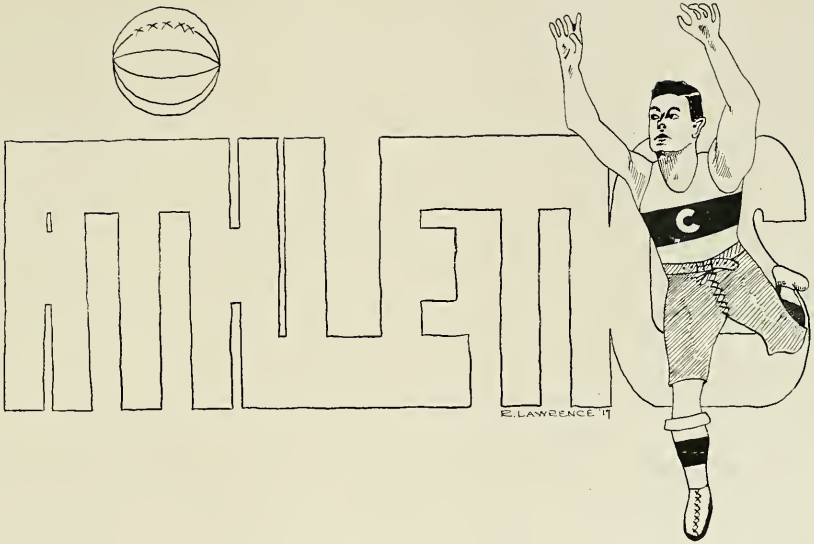
Treasurers, William S. Wheeler, Jr., Nelson M. Fuller

Managers, Karle M. Rich, Lester S. Durkee



The Co-op Staff

Perry F. Zwisler	*Editor-in-Chief*
A. Earle Smithies	*Business Manager*
Robert D. Black	*Assistant Business Manager*
John G. McLeod	*Literary Editor*
Russell Preble	*Editor of Athletics*
Herbert F. Dickson	*Editor of Jokes and Grinds*
Stanley P. Waugh	*Editor of Calendar*
Frank Pierce	*Editor of Classes*
Roland G. Porter	*Editor of Departments*
Chester F. Bailey	*Editor of Organizations*
J. Richard Lawrence	*Cartoonist*


ATHLETICS
C
E. LAWRENCE '17

Basket Ball Team, 1916-1917

COACH ELL

Basket Ball

Season 1916-1917

E. H. Clough	*Captain*
K. M. Rich	*Manager*
L. S. Durkee	*Manager*
Carl S. Ell	*Coach*

CAPTAIN CLOUGH

E. H. Clough	*Right Forward*
C. S. Martell	*Left Forward*
J. A. Knowlton	*Center*
N. S. Thomas	*Right Guard*
C. T. Harding	*Left Guard*
O. F. Thompson	*Substitute*
F. L. Flood	*Substitute*
G. E. Munt	*Substitute*

Basket Ball

THE season's schedule consisted of eleven games, of which the team won six and lost five. In discussing the team it would be impossible to name any particular weak points; the team as a whole was equally strong both on the defense and offense. However, it might be well to explain why so many games were lost at the first of the season. In the first place all the opening games were played away from home, under conditions that were entirely unfamiliar to the men. Secondly, it was impossible to have all of the first string men together at any one time for practice games, as the team was made up of Division A and B men. Lastly, the cancellation of the special gymnasium privileges at the end of the six weeks period was a serious handicap to Coach Ell, as he was left with only eight men who had access to the gymnasium. As a result of this it was impossible to form a second team for the regular men to work out against. However, when the season was about three-quarters over, Dean Geromanos succeeded in obtaining gym privileges for the entire student body at reduced rates. Coach Ell was then able to form a fairly formidable scrub team out of the men who availed themselves of this opportunity. The effect of the addition of this new material to the team can be judged by the results of the last four games of the season.

Captain Clough proved to be a very capable leader of his men; during the entire year he played an exceptionally steady game. In caging free throws Clough was an expert, securing 36 out of 55 trys, or an average of 65 per cent, as against his opponent's 51 per cent.

Martell put up a remarkably clever game at forward, considering the fact that he was never able to practice regularly with the other members of the team. His aggressiveness and "pep" were valuable assets. Knowlton was the best shot on the team; during the entire season he shot thirty-five baskets. His defensive work was of the best. Harding, captain of last year's team, played a strong game at back, which position was entirely new to him until this year. Thomas was the mainstay of the back-field. His man always found it practically impossible to get the ball past him. The second string men, Flood, Munt and Thompson, did good work throughout the entire year.

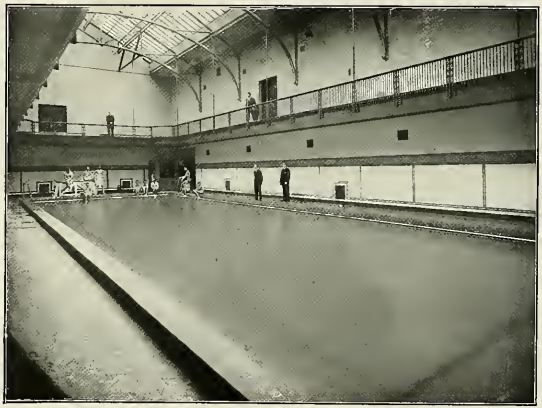
The Season's Results

Co-op.	21	Boston Y.M.C.A. 2d	17
Co-op.	30	Bridgewater State Normal	39
Co-op.	25	Rhode Island State Normal	60
Co-op.	23	Mass. College of Pharmacy	12
Co-op.	22	Fitchburg State Normal	39
Co-op.	27	Boston University	36
Co-op.	8	Boston University	45
Co-op.	45	Mass. Nautical Training	7
Co-op.	44	Wentworth Institute	11
Co-op.	28	Fitchburg State Normal	25
Co-op.	26	Watertown Community	25
Co-op.	299	Opponents	316

Team Statistics

Name	Field Goals	Foul Goals	Free Throw	Points
Clough, r.f.	26	36	55	88
Martell, l.f.	25	0	2	50
Knowlton, c.	35	1	1	71
Harding, r.g.	27	0	1	54
Thomas, l.g.	11	0	0	22
Flood, sub.	0	0	0	0
Munt, sub.	1	0	0	2
Thompson, sub.	3	0	0	6
	128	37	59	*293

* Ell scored 6 points in the Watertown Game



Base Ball Team, 1916-1917

COACH ODOM

Base Ball Season

1916-1917

H. F. Dickson	*Captain*
K. M. Rich	*Manager*
L. S. Durkee	*Manager*
W. F. Odom	*Coach*

H. F. Dickson	*Catcher*
R. D. Black	*Pitcher*
O. F. Thompson	*First Base*
E. H. Clough	*Second Base*
S. M. Atkinson	*Short Stop*
J. W. Toomey	*Third Base*
B. H. Capen	*Right Field*
A. R. Hawes	*Center Field*
P. A. Robbins	*Left Field*
E. H. Thompson	*Utility*
L. K. Burrell	*Substitute*
I. A. Knowlton	*Substitute*
G. E. Munt	*Substitute*
B. Naimon	*Substitute*

CAPTAIN DICKSON

Northeastern College

SOCIAL

Social Events

ALTHOUGH social events have never taken a very prominent part in school activities in years gone past, the year of 1916-17 has been one of the most active along this line in the history of the school. According to custom, the school authorities conducted the annual social; the remaining events, however, were carried out by different groups of the student body.

The most important events that have taken place are:

ANNUAL SOCIAL.
THE CO-OP. DANCE.
THE JUNIOR PROM.
FIELD DAY AT RIVERSIDE.

Annual Social

The annual social of the school was held in the gymnasium on the evening of January 2, 1917. The program was started by the School Orchestra, which rendered several popular selections. Next a basket-ball game was played between Division A, dressed as fair Co-eds, and Division B, attired in clown's suits. In spite of their skirts, ribbons and other feminine apparel, the fair co-eds easily vanquished the clowns by a score of—something to something else (nobody knew what). "Bobbie" Black made a most charming young lady. He was attired in an extremely low cut gown and abbreviated skirt which showed him to the best advantage.

Next on the program was another basket-ball game between Division C and the "Varsity." After a stiff battle, the "Varsity" won, 21-2. Munt was the hero of the game. During the last minute of play he cleverly dribbled the ball the entire length of the floor and caged a basket for Division C, thus saving his team from a shut-out.

The faculty sprung the surprise of the evening when they defeated the strong Senior basket-ball team, 16-8. The faculty were represented by such stars as Messrs. Ell, Leighton, and Odom. The instructors were attired in bright yellow jerseys. On the backs of the jerseys there were inscribed such symbols as 500,000 lbs. Concrete, E=IR, and Structural Stress = 0.

After the basket-ball game all adjourned to the natorium. Here the various tank stunts were performed in such a manner as to keep everyone in a gale of laughter. The events were: Bronco Busting, Tub Race, Canoe Tug-of-War, Water Polo, Piggie Back, Wrestling, Canoe Filling Contest, Candle Race, and Monte Cristo Sack Dive.

Between stunts the Seniors started a mustache race. At the crack of the pistol every man left the mark neck and neck. However, no one ever crossed the finish line, as all withdrew from the race after the first week. Miss Keegan was to act as judge.

At the close of the natorium events, all made their way to the restaurant, where dainty refreshments were served.

During the evening every Co-op wore a grotesque paper hat, which was inscribed with his respective class

numerals. In all there were about two hundred students and friends present. The large number of ladies present helped to make the social one of the most enjoyable and successful that has ever been held by the school.

The Co-op Dance

The most successful informal dance that has ever been given under the School name was held at the Chateau, Huntington Ave., on the evening of February 7th, 1917. From eight until eight-thirty the Co-ops and their friends were presented to the patronesses, Mrs. H. W. Geromanos, Mrs. M. E. Pinkham, and Mrs. C. S. Ell. Promptly at eight-thirty the orchestra struck up a lively one-step, and in a few moments the floor was covered with a swirling throng of gay young people. At intermission delicious refreshments were served in the banquet hall. Following intermission, dancing was continued until midnight.

The decorations, which consisted of a vari-colored scheme, were exceedingly pleasing and effective. The orders were small, dainty colored affairs, consisting of sixteen dances and four extras. Punch and light refreshments were available during the entire evening.

The proceeds from the dance were turned over to the Athletic Association for the support of athletics.

The committee in charge of the affair consisted of representatives from the Athletic Association, and the four Engineering Societies; Karl M. Rich, Division B manager of the Athletic Association, was chairman of the committee.

I WONDER WHY

Code of Ethics

Adopted by the Boston Society of Civil Engineers.

The code is intended to establish certain general principles and rules of action for the members of the Society.

I.

Engineers should encourage sound engineering learning and training in the scientific schools and in actual work.

II.

The success of engineers depends upon their moral character, scientific attainments, industry, integrity and business talent. Aggressive competition which often prevails in ordinary commercial transactions cannot exist among engineers without diminishing their usefulness and lowering the dignity and standing of the profession.

III.

The first duty of engineers is to their clients or employers, who have a right to expect that the portion of their business entrusted to the engineer will receive careful investigation and intelligent treatment, and that any special information derived by the engineer during his employment, will be considered confidential.

IV.

Engineers in their professional relations should be governed by strict rules of honor and courtesy. Their conduct toward each other should be such as to secure mutual confidence and good will.

(*a*) They should take no step with a view to divert to themselves the clients or work of other engineers.

(*b*) If a client should desire to transfer his work to another engineer, it is his privilege to do so, but the engineer in charge should be given notice, with the reason for the same, of such change by the client, and the engineer to whom it is transferred should, before accepting the work, communicate with the engineer in charge, in order that there may be no bad feeling caused through misunderstanding.

(*c*) All communications should be made through a responsible head, unless another has been designated to act for him.

(*d*) Services of an assistant to an engineer should not be secured without first communicating with the principal to ascertain if such action will interfere with his work.

(*e*) An assistant should not accept employment with another engineer without first consulting his superior.

(*f*) A superior should not stand in the way of advancement of a subordinate.

(*g*) The criticism of another's work should be broad and generous. The success of one member brings credit to the profession, and the failure of one, discredit to the whole.

(*h*) The attitude of superiors to subordinates should be that of helpfulness and encouragement.

The attitude of subordinates to superiors should be one of loyalty, free from captious criticism.

The treatment of each by the other should be open and frank.

(*i*) The engineer should be willing to assume his proper share of public work and render such assistance as is possible for the general good of the community.

V.

Consultations should be encouraged in cases of doubt or unusual responsibility. The aim should be to give the client the advantage of collective skill. Discussions should be confidential. Consulting engineers should not say or do anything to impair the confidence in the regular engineer, unless it is apparent that he is wholly incompetent.

VI.

With the understanding and consent of their clients, engineers may beforehand place any value on their services deemed proper.

Fees may be made upon a per diem, monthly or yearly basis, or as a fixed sum or upon a percentage basis. In addition a retainer may be charged.

It is desirable that a definite agreement be made in advance as to the fee and the extent of the work to be done, so as to avoid subsequent misunderstanding. The period of time should be designated during which the agreed fees shall apply and beyond which an additional or modified charge may be made.

VII.

Engineers should promptly inform their clients of any business connections, interests or circumstances which might prevent them from giving an unprejudiced opinion.

They should not receive commissions or any remuneration other than their direct charges for services rendered their clients.

In advertising, they should avoid, as far as possible, commercial methods.

VIII.

Engineers acting as experts in legal and other cases, in making reports and testifying, should not depart from the true statement of results based on sound engineering principles. To base reports or testimony upon theories not so founded and thereby produce erroneous results, is highly unprofessional and brings discredit on the profession, and upon the engineers guilty of such conduct.

IX.

The attitude of engineers toward contractors should be one of helpful co-operation and tactfulness, combined with just and firm criticism. They should assume a judicial attitude toward both parties to the contract.

X.

As the lines of distinction between the various branches of engineering are becoming less marked, an intimate relation between them should be encouraged.

The Calendar

Sept. 25. School opens, and "Whiskey" Jordan returns from the trenches, where he has been fighting with the Italian army of the Peabody Sewer Department.

Sept. 26. Mr. Mabbott appears, wearing a vicious-looking disguise. Evidently he has accepted a position as a Russian spy.

Sept. 27. We observe that Bird has severed diplomatic relations with the barber.

Sept. 28. "Ty." Fuwa arrived at school on time!!! Will wonders never cease?

Sept. 29. "Eckey" spent fifteen consecutive minutes in the drafting room!

Oct. 2. "Doc" Young celebrated the freshmen's first period in the Chem. Lab. with fireworks.

Oct. 3. Freshman Piper climbed inside one of the hoods, searching for hooks to hang his hat and coat on. As we looked upon his fresh green countenance through the glass we could not but think that there was something in the theory of man descending from the monkey.

Oct. 4. Thermo, my Thermo. Amen.

Oct. 5. "Johnny" Leighton asked the class in Applied Mechanics if a rod one and one half inches in diameter was a round or a square rod.

Oct. 6. "Joe" Coolidge was seen to leave the building with a heavily laden suit case. It was noticed that on the day before he had appeared at school minus a large portion of his hair. Has he met with foul play and was he carrying the ransom for his golden locks, or was he carrying the hair to a mattrass company in that suit case?

Oct. 7. Mr. Mabbott cleans his Ingersoll.

Oct. 9. Having met with no success in his efforts to grow a soup strainer, "Birdie" has given up in despair.

Oct. 10. The class in boiler design is making splendid progress with their *tanks*.

Oct. 11. "Beanie" Clapp again becomes active and smashes things.

"Hi" Preston is trying to elude the police by hiding behind those goggles.

Oct. 12. Our poker team, "Little Eva" Thomas and N. S. Smith, met with defeat. Smithy got away with seventeen cents, but Tom went home in a barrel.

Oct. 13. Preble feeds his room-mate, "Stubby" Dickson, on garlic so that he can find him in the dark.

Oct. 14. Captain Clough issues first call for basketball candidates, and oh! what a motley host did appear.

Oct. 16. Mr. Thomas, having decided to assume the bold, bad man *role*, appeared at school today without his accustomed pink in his buttonhole.

Oct. 17. "Pinkey" Kerr discovered three orthographic modifications of oxygen, viz., oxegen, oxegon, and oxegeon.

Oct. 18. Harding informed "Doc." Young that Ind. Chem. on the schedule stood for indecent chemistry.

Oct. 19. Mr. Pinkham informed the class in Math. H that he was looking for revenge.

Oct. 20. "Deacon" Cooper attends a show on Washington Street. The only explanation that can be made is that he attended in the capacity of a censor.

Oct. 21. Sam Greenberg discovers that a lamp flame should not be held near an open vessel containing ether.

Oct. 23. Mr. "Gerry" found his flivver coughing and sneezing and investigated the apparent illness. After the smoke had cleared away, he found himself with thirteen cuts and the main spring.

Oct. 24. "Sandy" McLeod having decided to enroll in the correspondence course at Hall's barber school passed his entrance exam. by cutting his own hair without a mirror. The result can be seen any time that he is not busy with the stenographers.

Oct. 25. As result of a pressing party the case Pierce v. Fuwa will be brought before the uncivil court, Judge Badger presiding, to determine the ownership of two pairs of trousers. As each of the contestants are "sharks" at the course in Business Law, a warm suit is expected.

Oct. 27. "Rembrandt" Hawes in geology recitation said that he had seen a sidewalk in Cambridge being raised up by a mushroom. You may have seen it, "Rembrandt," but tell us where you were before you saw that. It is a sure thing that it was some other town than Cambridge, as that place is dry as a bone.

Oct. 28. Hudson discovers through Doctor Worman that he is related to Moses. It is well known that "Huddy" is a harp, but it was not known that he was a Jew's harp.

Oct. 29. Max Cohen, the great (?) soloist of the Glee Club, sings "The Rosary." And Max is still wondering why he got a bill from the roofer.

Oct. 30. The Chem. Society pose for their pictures. The pictures are to be used as an advertisement for a non-breakable camera which is about to make its appearance on the market.

Oct. 31. Porter, armed with a savage automatic and a club, collects money for the Athletic Association.

Nov. 1. "Cupid" Stensrud wanted a drink, so he inserted a key in the place where the handle should be on the drinking fountain, and then, bending low, displaying his Adonis-like figure, started to drink, but the key slipped and "Cupid" got his face washed.

Nov. 2. "Skeet" Constantine appeared at school in a sleepy condition after spending the night before at a dance at the Danvers Insane Asylum. "Conney" says that he was renewing old acquaintances.

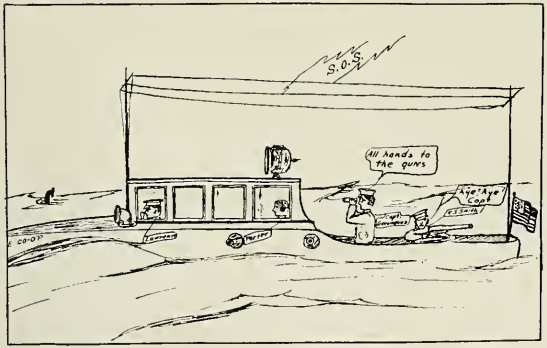
Nov. 3. Forest Evans arrived at school at 9.30. Forest claims that he was waylaid by the Emerson College girls and that he could not escape any earlier.

Nov. 4. Blackwell delivered a lecture at the engineering conference with all the grace (?) and eloquence of a politician. As he fluttered, fairylike, back and forth,

treading lightly with hobnail shoes, one could but think of the wild animals in the Zoo as they pace back and forth in search of freedom.

Nov. 6. Freshman Kenney made an appearance today with a crop of alfalfa under his nose that would rival Mr. Mabbotts or Herricks. It is queer how these freshmen like to imitate the real men.

Nov. 8. Kendall has returned to school after spending last week on his honeymoon. Kendall and his wife saw much of the fighting in France; in fact they saw it all twice and would have seen it the third time, but the usher made them go out, as he claimed they had had their ten cents' worth.



Nov. 9. Where did Zwisler get the upper story of a pair of pajamas that he is wearing in the Chem. Lab.?

Nov. 10. Instructor "Curley" Thomas took a look out of the window to see what was the center of attraction of his Applied class, and then he turned away blushing. Curiosity once killed a cat, "Tommie."

Nov. 11. Like a siren of the myths, Littlefield poured forth his sweet (?) song on the morning breeze in room 352. And, like a hardened mariner of old, Mr. Pinkham sailed forth from room 351 to the call of the siren; but the poor siren fell a victim of the mariner's sharp tongue, and the song was heard no more.

Nov. 13. Mr. Mabbott got his feet tangled up with a large bottle of "hypo.," and turned the Chem. office into a swimming pool. He was floundering around, sputtering "Thermo," until he caught sight of a brush, which was floating near by. He grabbed the brush, and with its aid managed to reach safety. After the brush had dried out, it looked exactly like his mustache.

Nov. 14. Tracey made an appearance today in a badly beaten-up condition, with numerous pieces of court plaster on his face. There were many rumors about as to how he got beaten up. After conferring with an authority, it was found out that Tracey has found the girl of his dreams and he was calling last night when her father returned. 'Nuf sed.

Nov. 15. "Doc" Young was confined to his bed today as a result of the Chem. smoker last evening. "Doc." says that he has the "butt" on his mantelpiece with a pink ribbon tied around it.

Nov. 16. Where did the elevator man "Willyum" get the hat?

Nov. 17. "Needa Baba" (Luce), the famous vampire of the screen, stars at basketball on his first appearance.

Nov. 18. "Billy" Sunday pays a visit and gets in touch with one of our hardened criminals. After much pleading "Billy" succeeded in converting Hudson.

Nov. 20. Constantine is forced by the board of health to dispose of his pipe. So "Conney" sent it to the morgue, and then he walked into the ten-cent store and planked down ten pennies and got a pipe with a bowl the size of a bean pot. He also bought a mop and a can of "Old Dutch Cleanser," so that he can scrub it out every week.

Nov. 21. Everything was quiet as a boiler factory today at noon time, and as one sat eating his lunch he could hear above the din of gurgling soup, etc., the patter of Joe's number 10's in the hallway as he marched with joy toward a quiet spot where he could rest his weary limbs and partake of the repast that he had his mind on all morning. But Joe's joy was suddenly turned to sorrow as the Thermos bottle slipped and crashed to the floor, with a noise like thunder. The pasteurized milk ran all over the floor, while poor Joe looked on and his thoughts of dinner fled. Then Joe pulled himself together in all his sorrow and went bravely back to work minus a dinner.

Nov. 22. "Beanie" Clapp pays a visit to "Big Chief Whiskey Jordan" and his tribe of savages at the reservation at Peabody.

Nov. 23. "Eckey" lectures on why the price of string beans has gone up.

Nov. 24. "Duckey" Atkinson returned to school today. "Duckey" did not return to school earlier in the term as he had not decided which would be best: to spend the winter at Deer Island or at school. He said that Deer Island would be the cheaper, but if he went there he would get solitary confinement, and as he does not like that indoor sport he returned to school.

Nov. 25. "Ty" Fuwa brought into school some sweet cider which had a very curious effect upon all who tackled it.

Nov. 27. Curtis tried out his infernal machine in the Electric Lab. "Doc." Young assisted, and two successful explosions were made.

Nov. 28. "Doc." Worman told Piper that he must not wiggle so much. "Doc." did not know that "Pipe" is one of "Billy" Watson's chorus girls, and he was practising.

Nov. 29. A couple of Harps visit "Billy" Odom and try to sell him some cloth for a suit. Oh! it's a fine piece of goods.

Nov. 30. Somebody threw the axe at "Bob" Black. "Bob" says that he has a perfect right to wear curls, without being molested.

Dec. 1. Turner Harding has fallen for the gay white lights and parted with a perfectly good quarter. The man in the shop with the glittering and striped pole said he would rather clip a dog or a horse.

Dec. 2. Mr. Mabbott's Thermo book has mysteriously disappeared; in the words of the poet, perhaps it has returned "to the vile dust from which it sprung, unwept, unhonored and unsung."

Dec. 6. Max Butter, of the freshman class, had much difficulty in telling Dr. Spear how his name was spelled.

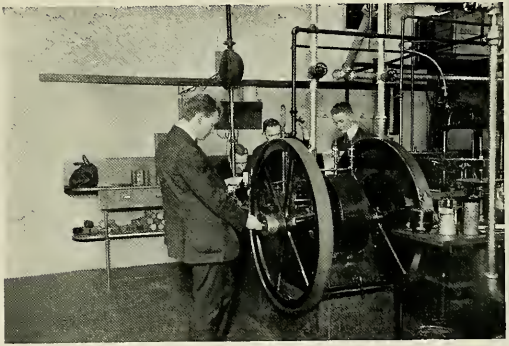
Dec. 7. George Munt spent the day playing bridge with the old ladies' bridge club of his home town.

Dec. 8. Big flood in the Chem. Lab. and Turner Harding is elected the scrubwoman.

Dec. 9. Watson came to school with a dame's hair of scarlet hue on his shoulder. Where was he last night?

Dec. 12. Haven announces that he is going to join the army as an officer. He is going to take the little girl from Hanover to a justice of the peace, and then, "good-night," engineers!

Dec. 13. "Floody" resolves never to laugh again on Huntington Avenue, as three smokey janes got peeved at his merry laughter today and gave him a severe call down. And oh! what language.



Dec. 14. Miss Luce poses as the sleeping beauty in room 351. Some beauty!

Dec. 15. "Pinkey" Kerr took a trip to Mr. Odom's boarding house and fell in love with the maid. "Pinkey" may be found in Cambridge any evening now until further notice.

Dec. 18. Kendall appeared wearing a necktie of a dazzling character, which he purchased at the headquarters of the Polish Relief Fund.

Dec. 19. Where did Ward get the yellow breeches?

Dec. 20. Only a few Chem. men were able to show up today after last night's cider (?) party. Those that did show up were the few hardened warriors that came back in hopes of getting more.

Dec. 21. Turner Harding appears with a black eye and a badly cut nose. Turner says that he was walking through the woods when a savage stick flew at him and inflicted the wound. If that was so, it is a sure bet that Turner had not been visiting Thompson's Spa. Later reports state that Turner went calling on his sweetheart and she took her accustomed place on Turner's knee. Now Turner had a sprained ankle as a result of a basketball game, and he was unable to support her weight (250 lbs.), so she landed on the floor. Susie got peeved at that and doubled up her little hand and, smack! Turner went down for the count. Never mind, Turner, the course of true love never runs smooth.

Dec. 23. As furs are fashionable, "Beanie" Clapp is raising a mustache. Any tomcat has a right to be proud when he sees "Beanie's," and then thinks of his own mustache.

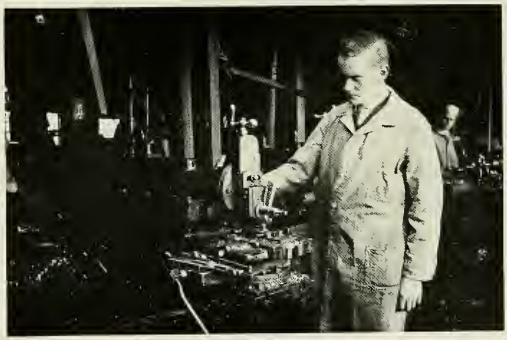
Dec. 27. Durkie informs the mechanism class that 4 and 4 are 8. We can't all be bright.

Dec. 28. "Deac" Hawes appears all dolled up and spends the afternoon at the tabernacle on the Amen bench.

Dec. 29. "Doc." Young has been elected selectman of Westboro. "Doc." received all the votes in town except the minister's. To show his appreciation, he will give a banquet to the ones who voted for him. The banquet will be held in the largest place in town, Cy Perkins' barn. All the forty-nine inhabitants have accepted "Doc.'s" invitation, and a big time is expected.

Jan. 2. "Beanie" Clapp has shaved it off! He went calling last night, and Edna's dog did not know him with the mustache, so "Beanie" went home, chopped it off, and then the pup let him pass the golden gate.

Jan. 3. Lucey sends Louise a letter, and leaves his



Note the Operator

gloves at the post office. Anyone finding a pair of long pink gloves, please return to Lucey.

JAN. 4. Mr. Mabbott files suit against the Mechanical Engineering Society for putting dynamite in the cigar they presented to him last evening.

JAN. 5. Hi. Preston sings "I hear you calling me," as the paddy wagon goes by, ringing its gong.

JAN. 8. "Rembrandt" Hawes ate his lunch and did not know it. He then came around and blamed every one he met, for pinching it.

JAN. 9. Mr. "Curley" Thomas had his curls clipped, and, like Sampson, he was helpless.

JAN. 10. Miss Luce has returned from a very exciting clam-digging expedition at his home town.

JAN. 11. A. H. Brown has returned from the Blue Hills where he has been doing a Rip Van Winkle stunt.

JAN. 12. Mr. Coolidge was walking along Huntington Ave. with a young lady and she was being towed by her pet dog, Dearie. Mr. Coolidge was conversing with her when the dog began to bark. She turned to the dog and said, "Now, Dearie, you mustn't mock people."

JAN. 15. George Munt has purchased a suit case to carry his books and lunch. He can be seen carrying it on his shoulder any day.

JAN. 17. Lawrence got his feet wet, but Nutting got the cold. It's all right they are room-mates.

Jan. 18. Pelley goes to see the chickens. This may not seem a bit out of the ordinary but it is, as these chickens were at the poultry show.

Jan. 19. "Dinney" Sargent was awakened this morning by something biting his toe. "Dinney" was frightened and looked to see if some of the wild animals had broken into his room and was attacking him, but he found out that his teeth had dropped out during the night and they were responsible for his fright.

JAN. 20. Mr. Thomas appeared with his neck tied up. What's the trouble, Tommie, did its fibers reach their elastic limit in yesterday's big wind?

JAN. 22. The Big 7 has a banquet at Lander's.

JAN. 23. Bill Bowden arrived home at 2.30 this morning and found that he had forgotten the key. Bill luckily found a window open and he crawled through it, got the key and went out the same window; then unlocked the door and let himself in. It seems that Bill is getting absent-minded lately or else he is getting gay in his old age.

JAN. 31. Turner Harding proclaims that he is the most perfect built man in the school.

FEB. 2. At the B.U. game when Harding and Clough got into their basketball suits they did not know what to do with their fat pocketbooks, but upon thinking the matter over it was decided to let Mr. Odom hold the gold. After the game the boys sought Mr. Odom, but he could not be found. Harding got angry at once and wanted to get a cop. Clough did not get mad but got sulky as he pictured himself counting the railroad ties between

Boston and Medway. The excitement that Harding caused attracted his team-mates and they came to the the rescue of the Medway pair.

Feb. 3. Mr. Odom returns the money and two fellows are in better spirits.

Feb. 5. According to the bulletin board, W.I.B., Jr., has been captured. And he was such a piece loving fellow, too.

Feb. 6. The high cost of smoking has struck Big Tom. He has hocked his big pipe and purchased one the size of a thimble.

Feb. 7. The first Co-Op dance took place this evening and was a grand success.

Feb. 8. Zwisler is home on one of his trips again. I wonder why?

Feb. 9. "Coop" starts on a trip to "Noo York." Look out for the gold ones, "Coop."

Feb. 10. Lucey has a new bag which is a combination of a school bag and a vanity case. Lucey has with him at all times, safety pins, hair pins, cold cream, face powder, rouge, and a curling iron for that mustache.

Feb. 13. N. S. Smith says, "You fellows should not be afraid of war; wear Paris garters, no metal can touch you."

Feb. 14. Blackwell did not appear at school today, as the intense cold weather caused the donkey-engine to freeze up.

Feb. 17. Mr. Coolidge returns, but with a tired look upon his face which the hard work that he had done in planning tests.

Feb. 20. Nutting informs his classmates that steel is cooked cast iron. Why didn't you tell them how it was cooked? Should it be baked, fried, boiled, or stewed?

Feb. 21. Mr. Odom was mistaken for John McCormic. We would like very much to hear him pull off the harmony stuff.

Feb. 23. Mr. Mabbott delivers an illustrated lecture on hydraulics. Mr. Mabbott delivered his lecture to a large and intelligent audience, and began by showing pictures of men who are famous hydraulic engineers. Mr. Francis, Mr. Thomas, and Mr. Hudson had their faces flashed on the screen. The first man is famous for his experiments and formula, the second for his problems, which get our goats, and the third for his speed and accuracy in the solving of the problems.

Feb. 24. "Stubby" Dickson has given up eating at the Automat, as the food is so high that it is beyond him. "Stubby" said it was all right until they made him stop standing on the chairs; but now things are way beyond his reach.

Feb. 26. "Sam" Atkinson brings a suit case to school today. Sam says that he has just bought a flivver and, as it looked like rain, he thought that it would be the best way to bring his purchase.

Feb. 28. Bob Black has resigned his office as snake pickler at the Museum.

Mar. 1. Locke and Stensrud serenade the young ladies who, unluckily, chose the room opposite room L, for a place to spend their noon hour. As a result our friends at the Conservatory have made the ruling that all their windows must be closed and locked at noontimes from now on.

Mar. 2. Mary Ann Hosmer writes Beatrice Fairfax a long letter.

Mar. 3. Sandy McLeod purchases a new pair of kilties. Isn't the weather a little bit too chilly for them as yet, Sandy?

Mar. 5. Bill Bowden refused to go to the blackboard for Joe today, but after he was coaxed a bit Bill went and displayed a pair of the largest rubber boots that have ever been seen by a Co-op. Bill said that the snow was so deep in his town that he had to wear them and they would not take them in the check room as they did not have the space to store such monsters, so Bill had to wear them to classes.

Mar. 6. Kendall digs himself out of the snow and returns after being snowbound for a day.

Mar. 7. Elsie has her picture taken for *The Cauldron*. An afternoon's job.

Mar. 8. Joe introduces Miss Perry's Kindergarten methods into the Math. class.

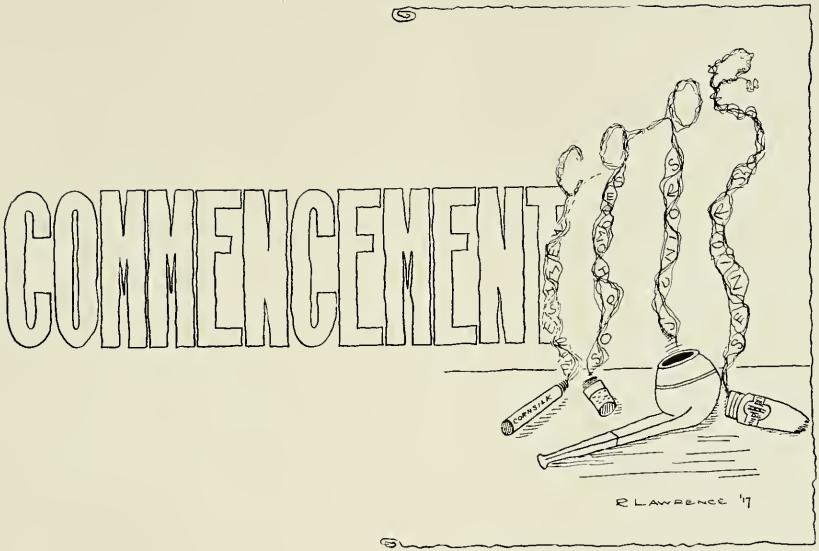
Mar. 9. "Hoot Mon" McLeod appears all dolled up in a "Dickey" collar, one of those that the end men wear in a minstrel show.

Mar. 12. Mr. Odom did not appear at school today as he had a bad cold which he caught Saturday night in the park. It is a sure sign that spring is here when the young man's fancy is turning, after its annual custom, to thoughts of love.

Mar. 13. Travis joins the suffragettes because his girl did.

Mar. 14. More signs of spring. Mr. Thomas is wearing flowers in his buttonhole again.

Mar. 16. Porter has new duties assigned to him. Every time the fair young chauffeurs in the Auto School get noisy, Porter is sent up as a soothing medium.


COMMENCEMENT
R LAWRENCE '17

Class Day Exercises

June 8, 1917

10.30 A.M.—Baseball Game (Seniors vs. Faculty)

2.30 P.M.—Class Day Exercises in Bates Hall

PROGRAM

Selection	Orchestra
Address by President of Class	Edgar H. Curtis
History of Class of 1917	Karle M. Rich
Selection	Orchestra
Address by Class Engineer ("Prophecy")	Russell A. Preble
Class Will	Herbert F. Dickson
Selection	Orchestra
7.00 P.M.—Banquet and Dansant	Class and Guests

Baccalaureate Service

Sunday Afternoon, June the Tenth, at Four O'clock

Old South Church, Boston

Organ Voluntary

Processional March "America"

Invocation

Mr. George W. Mehaffey, General Secretary, Boston Young Men's Christian Association

Response

Selection—Organ

Anthem—Choir

Baccalaureate Address

Rev. John Abraham Muste, of the Newtonville Congregational Church

Anthem—Choir

Closing Prayer and Benediction

Recessional

Postlude

Frank Palmer Speare, M.H., President of the College, Presiding

Commencement Exercises

JUNE THIRTEENTH, NINETEEN HUNDRED AND SEVENTEEN, EIGHT O'CLOCK

Overture
Processional
Invocation — PROFESSOR JAMES B. TAYLOR
Response

ORATIONS

Subject—To be announced later
ORATOR FOR THE SCHOOL OF LAW
Subject—To be announced later
ORATOR FOR THE SCHOOL OF COMMERCE AND FINANCE
Subject—To be announced later
ORATOR FOR THE CO-OPERATIVE SCHOOL OF ENGINEERING
Subject—To be announced later
ORATOR FOR THE EVENING SCHOOL OF ENGINEERING
Selection

INTERMISSION

Selection

ADDRESS

MR. PAYSON SMITH, Commissioner of Education of Massachusetts
Selection
Conferring of Degrees and Diplomas
Bestowal of Alumni Scroll

BENEDICTION

Recessional
Postlude

The following list of books is printed so that Students and Alumni may know what to get and where to obtain them. In the opinion of the Faculty, these are the choice books dealing with engineering subjects.

Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
Design of Plate Girders	The Theory of Structures	C. M. Spofford	McGraw-Hill	$4.00	
	Design of Plate Girders	L. E. Moore	McGraw-Hill	$3.00	Plate girder bridges and box girders.
Stresses in Framed Structures	The Theory of Structures	C. M. Spofford	McGraw-Hill	$4.00	Masonry dams, retaining walls, and arches.
	Roofs and Bridges Part I	Merriman and Jacoby	Wiley & Sons	$2.25	
Timber Framing	Structural Details	Jacoby	Wiley & Sons	$2.25	Details in timber structures.
Bridge Design	Roofs and Bridges Part III	Merriman and Jacoby	Wiley & Sons	$2.25	Plate girder and truss bridges.
Civil Engineers' Pocket Book	American Civil Engineers' Pocket Book	Merriman	Wiley & Sons	$5.00	
Bridge Design	De Pontibus	J. A. Waddell	Wiley & Sons	$2.00	
	Design of Steel Bridges	F. C. Kuntz	McGraw-Hill	$5.00	
Strength of Materials	Applied Mechanics Vol. II	Fuller and Johnson	John Wiley & Sons		
	Strength of Materials	J. E. Boyd	McGraw-Hill	$2.50	

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C. N. GREGG.

Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
Structural Drawing	Structural Steel Drafting and Elementary Design	C. D. Conklin, Jr.	John Wiley & Sons	$2.50	
Surveying	Surveying Manual	Pence and Ketchum	McGraw-Hill	$1.00	Contains many practical problems.
	Plane Surveying	J. C. Tracy	John Wiley & Sons	$3.00	
Highways	Highway Engineering	Blanchard and Drowne	John Wiley & Sons	$4.50	
	Construction of Roads and Pavements	Agg	McGraw-Hill	$2.50	
Foundations	Foundations of Bridges and Buildings	Jacoby and Davis	McGraw-Hill Co.	$4.00	
	Masonry Construction	I. O. Baker	John Wiley & Sons	$4.50	
Materials	Materials of Construction	A. P. Mills	John Wiley & Sons	$4.50	
	Materials of Construction	J. B. Johnson	John Wiley & Sons	$6.00	
Topographical Drawing	Topographical Drawing	F. T. Daniels	D. C. Heath & Co.	$1.50	
Reinforced Concrete	Reinforced Concrete Construction	Hool	McGraw-Hill		
	Vol. I			$2.50	Beams, slabs, girders and columns.
	Vol. II			$5.00	Retaining walls and buildings.
	Vol. III			$5.00	Arches.
	Concrete, Plain and Reinforced	Taylor and Thompson	John Wiley & Sons	$5.00	

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Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
R. R. Eng.	Railroad Curves and Earthwork	C. F. Allen	McGraw-Hill	$1.80	Combined volume
	Field and Office Tables	C. F. Allen	McGraw-Hill	$1.80	$3.00.
	Field Engineering	Searles and Ives	John Wiley & Sons	$3.00	
Metallurgy	Metallurgy of Steel Vol. I & II	Harbord and Hall	J. B. Lippincott & Co.		Very thorough discussion of manufacture and metallography of steel.
Metallurgy	Iron, Steel & other Alloys	H. M. Howe	McGraw-Hill		Brief description of steel manufacture and much metallography.
Metallurgy	Metallurgy of Iron & Steel	B. Stoughton	McGraw-Hill		Pretty good on steel manufacture and uses.
Metallurgy	Mixed Metals	Hioms			Good on non-ferrous alloys.
Mathematics	Mathematical Handbook	Seaver	McGraw-Hill	$2.50	Formulas for reference: algebra, trig., analyt. geom., calculus, and tables.
Calculus	The Calculus	Davis	The Macmillan Co.	$2.00	This book shows many applications of the calculus.
Mechanism	Elements of Mechanism	Schwamb and Merrill	John Wiley & Sons	$2.50	
Mathematics, Calculus & Trigon.	Saxelby's Practical Mathematics	Saxelby	Longmans Green Co.	$2.25	Good for problem work.

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Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
Calculus	Differential and Integral Calculus	Osgood W. F.	Macmillan Co.		Text book in calculus.
Analytic Geometry Trigonometry	Analytic Geometry	Ashton C. H.			
	Practical Math. Part IV	Palmer C. I.	McGraw-Hill	$0.75	The essentials of trig., with a large number of problems.
	Plane Trigonometry	Wentworth G. A.	Ginn & Co		Text book in trig.
Geometry	Applied Mathematics	Cobb H. E.	Ginn & Co		Practical probs. in algebra, geom., and trig.
	Plane Geometry	Wentworth	Ginn & Co		Text book (Theorems).
Physics Elementary Texts	Applied Mechanics	Jamiesons	Longmans Green Co.		Practical physics, with some problems worked out.
	A Text Book in Physics	Wentworth & Hill	Ginn & Co		A good high school text.
College Texts	College Physics	Kimball A. L.	Henry Holt & Co.		
	College Physics	Duffs			
Mechanical Engineering	Mechanical Engineers' Handbook —1800 pages	Lionel S. Marks	McGraw-Hill Book Co.	$5.00	General mechanical engineering and allied subjects; short treatise on surveying and general engineering information; very good mathematical sections. Arrangement of subject matter excellent.
	Mechanical Engineer's Pocketbook —1500 pages	Kent	John Wiley & Sons	$5.00	The accepted standard Mechanical Engineers' Handbook — not quite as broad as Marks'.

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Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
Automobiles	The Gasoline Automobile. Two volumes	P. M. Heldt	Horseless Age	About $5.00	The accepted standard book of automobile design. Stresses, gas velocity, and electrical systems theoretically discussed.
Machine Design	Halseys Handbook	Frederick A. Halsey	McGraw-Hill Book Company	$5.00	Theoretical book for machine designers. Also standards of screws, screw threads, etc.
	Machinery's Handbook		The Industrial Press New York	$5.00	Details of machine design. Speeds and feeds of machines, tool and fixture design.
Machine Design (Continued)	American Machinist's Handbook	Colvin & Stanley	McGraw-Hill Book Co. Inc.	$3.00	Small treatise for tool-designing and general machine drafting.
Power Plant	Steam Power Plant Engineering	Gebhardt	John Wiley & Sons	About $6.00	Full treatment of steam power plant work. Very complete.
Thermodynamics	Thermodynamics of Steam Engine	Peabody	John Wiley & Sons	$5.00	Theoretical treatment of steam engine and power plant.
	Heat Engines	Allen & Borsley	McGraw-Hill Book Company	$3.50	Very clear treatment of steam engine and boiler practice; also perfect gases and gas-engine work.
Mechanism	No good books on subject				Most information can be taken from a handbook.

Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
Machine Shop Practice	Methods of Machine Shop Work	Halsey	McGraw-Hill Book Company	$5.00	Excellent book for factory foreman, superintendent, or production man.
Drawing	Engineering Drawing	French	McGraw-Hill	$2.50	Best reference book for standard methods of conventions, dimensioning, etc.
Factory Management	Factory Organization	Diemer	Power New York	$2.00	Good reference book on factory management.
Mechanical Magazines	Power Machinery		Industrial Press		For steam engineering.
Hyd. Motors	Hyd Motors	Daugherty	McGraw-Hill		For machine practice.
				$2.50	Standard authority on subject.
Chemical and Physical Data	Chemical Annual	J. C. Olsen	D. Van Nostrand Co.	$2.50	Physical and chemical constants and aids to chemical calculations.
Chemical and Physical Data	Handbook of Chemistry and Physics		Chemical Rubber Co.	$2.00	Includes mathematical formulas.
Dyeing	Laboratory Manual of Dyeing and Textile Chemistry	J. Merritt Matthews	John Wiley & Sons, Inc.	$3.25	Commercial dye-stuffs, their use, testing, and the testing of textiles.
Electro-Analysis	Quantitative Analysis by Electrolysis	Classen-Hall	John Wiley & Sons, Inc.	$2.50	Very latest methods.
Food Analysis	Food Inspection and Analysis	Leach-Winton	John Wiley & Sons, Inc.	$6.50	Indispensable to food chemists.
Food Analysis	Food Analysis	A. G. Woodman	McGraw-Hill Book Co.	$3.00	Gives interpretation of results.
Gas and Fuel Analysis	Technical Gas and Fuel Analysis	A. H. White	McGraw-Hill Book Co.	$2.00	Good description of and detailed directions for using standard apparatus.

Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
High Temperature Measurements	The Measurements of High Temperatures	Burgess-Le Chatelier	John Wiley & Sons, Inc.	$4.00	
Inorganic Analysis (General)	Analytical Chemistry Vol. I Qualitative Analysis Vol. II Quantitative Analysis	Treadwell-Hall	John Wiley & Sons, Inc.	 $3.00 $3.50	Covers entire field of general inorganic analysis
Lubricating Oils	Examination of Lubricating Oils	Thomas B. Stillman	Chemical Publishing Company	$1.25	
Metallurgical Analysis	Metallurgical Analysis	Lord & Demorest	McGraw-Hill Book Co.	$2.50	Standard methods covering all needs of the metallurgical chemist.
Micro-Analysis of Foods	Microscopy of Vegetable Foods	A. L. Winton	John Wiley & Sons,	$6.50	Special reference to detection of adulteration and diagnosis of mixtures
Microscopic Examinations	Microscopy of Technical Products	Hanasausek-Winton	John Wiley & Sons, Inc.	$5.00	General methods of microscopic examinations
Oils, Fats, and Waxes	The Chemical Technology and Analysis of Oils, Fats and Waxes	J. Lewkowitsch	The MacMillan Co.	$6.00 each	The recognized authority on oils, fats, and waxes (3 vols.)
Ore Analysis	Technical Methods of Ore Analysis	A. H. Low	John Wiley & Sons, Inc.	$2.75	Covers its subject in clear, concise manner.
Gas Analysis	Gas Analysis	L. M. Dennis	The Macmillan Co.	$2.10	Discusses underlying principles very fully.
Glass Blowing	Laboratory Manual of Glass Blowing	F. C. Frary	McGraw-Hill Book Co.	$0.75	
Organic Chemical Analysis	Allen's Commercial Organic Analysis	A. H. Allen	P. Blakiston's Sons Company	$5.00 each	Covers entire field of its subject (9 vols.)

Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
Paint Analysis	Analysis of Paint and Varnish Products	C. D. Holley	John Wiley & Sons, Inc.	$2.50	Describes detection of adulteration
Poisons and Drugs	The Detection of Poisons and Powerful Drugs	Autenrieth	P. Blakiston's Sons & Co.	$2.00	Tests for common poisons and quantitative estimation of medicinal principles
Sugar Analysis	A Handbook for Cane Sugar Manufacturers and their Chemists	Guilford-Spencer	John Wiley & Sons, Inc.	$3.50	Practical works, methods and control. Treats of by-products
Sugar Analysis	A Handbook of Sugar Analysis	C. A. Browne	John Wiley & Sons, Inc.	$6.00	Laboratory Methods
Technical Testing and Analysis	Engineering Chemistry	Thomas B. Stillman	The Chemical Pub. Co.	$5.00	Quantitative analysis and physical testing such as would likely be met with in a general testing or works lahoratory
Wiring	Interior Wiring	A. L. Cook	John Wiley & Sons	$2.00	A complete guide to modern practice in electric wiring and power applications.
Wireless	Wireless Telegraphy	R. Stanley	Longmans Green & Co.	$2.00	Complete elementary book on wireless apparatus and operation.
Handbooks	American Engineers' Handbook	H. Pender Editor-in-chief	John Wiley & Sons	$5.00	
	Standard Handbook for Electrical Engineers	F. F. Fowle Editor-in-Chief	McGraw-Hill Book Co.	$5.00	
	Electrical Engineers' Pocket Book	H. A. Foster Editor-in-Chief	D. Van Nostrand Co.	$5.00	

Subject	*Title of Book*	*Author*	*Publisher*	*List Price*	*Remarks*
Electricity and Magnetism	Elements of Electricity	Col. W. Robinson	John Wiley & Sons	$2.50	General discussion for non-electrical men.
	Lessons in Practical Electricity	C. W. Swoope	D. Van Nostrand Co.	$2.00	Elementary book dealing with principles, simple experiments, and problems.
Principles of Electrical Engineering	Princples of Electrical Engineering	H. Pender	McGraw-Hill Book Co.	$4.00	Theoretical treatment of electricity and magnetism, direct and alternating currents.
	Principles and Practice of Electrical Engineering	A. Gray	McGraw-Hill Book Co.	$3 00	Practical book on direct and alternating current machinery.
Direct Current Machinery	Elements of Electrical Engineering Direct Currents	Franklin and Esty	The Macmillan Co.	$4.00	Elementary treatment on direct current machinery.
	Principles of Direct Current Machines	A. S. Langsdorf	McGraw-Hill Book Co.	$3.00	Complete treatment of design and operation of direct current machinery.
Alternating Currents	Alternating Currents	C. A. Magnusson	McGraw-Hill Book Co.	$4.00	Complete basic treatment of alternating current circuits and machinery.
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Alternating Current Machinery	Principles of Alternating Current Machinery	R. R. Lawrence	McGraw-Hill Book Co.	$4.50	Complete treatment, dealing strictly with alternating current machinery.

Subject	*Title of Book*	*Author*	*Publisher*		*List Price*	*Remarks*
Generation of Power	Engineering of Power Plants	Fernald and Orrok	McGraw-Hill Co.	Book	$4.00	Book dealing with the practice of power plant engineering from the standpoint of comparative costs.
Transmission of Power	Elements of Electrical transmission	O. J. Ferguson	The Macmillan Co.		$3.50	A book dealing with the theory and practice of electrical transmission.
	Alternating Currents	C. A. Magnusson	McGraw-Hill Co.	Book	$4.00	This book contains complete calculations for two operating lines.
Electric Railways	The Electric Railway	A. N. Buck	McGraw-Hill Co.	Book	$3.00	A fundamental treatment of electric railways.
Storage Batteries	Storage Battery Engineering	L. Lyndon	McGraw-Hill Co.	Book	$4.00	Practical treatise for engineers.
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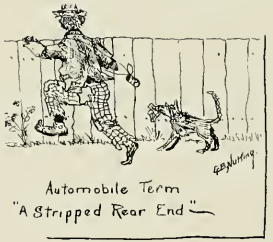

HUMOROUS

Senior Ballot

Best Natured	Viles
Class Grind	Spector
Sportiest	Brown
Biggest Jollier	Dickson
Squarest	Clough
Laziest	Switzer
Class Shark	Rich
Biggest Bluffer	Zwisler
Least Appreciated	Smith
Most Obliging	Otterson
Most Popular	Curtis
Bluffer that gets away with it best	Stark
Handsomest	Naimon
One who does the most for the Co-Op. School	Zwisler
Hardest Subject	Concrete
Easiest Subject	Eng. Conf.
What year is hardest?	Fourth
Do you use tobacco?	Yes
In what form?	Freeze and eat it
Do you drink?	Not so's you'd notice it
What time do you retire?	Between 9 P.M. and 9 A.M.
Have you ever studied all night?	Yes (Girls)
How much do you spend a year?	All I have
How often do you go fussing?	Weekly
Are you partial to any one girl?	Yes, Elsie
Who is the hardest instructor?	Mr. Ell
Who is the easiest instructor?	Mr. Smith
Who is the most popular instructor?	Mr. Coolidge
Who is the most successful instructor?	Mr. Ell

As we see the Faculty

Mr. Geromanos.—As we do not get together very often.

Mr. Ell.—You did it by main strength and awkwardness.

Mr. Leighton.—Use your bean.

Mr. Thomas.—You get out.

Mr. Pinkham.—Now, let's see.

Mr. Mabbott.—You may use your slide rules and brains in this exam (if you have any).

Mr. Coolidge.—All answers to five significant figures.

Mr. Eldred.—After being asked a question, "Now what do you think?"

Mr. Smith.—Now, gentlemen, at the close of the last exercise.

Mr. Odom.—Can the chatter and get busy.

§ § §

H. C. Mabbott to Big 7: After an hour lecture on the Emerson Bomb in which he discusses politics, belt-slipping, turbines, and Malle Articulators, but says nothing whatsoever concerning the Emerson Bomb: "In short the principle of the bomb is this: If there is no rise in temperature, the coal hasn't been fired; if the temperature rises, the coal has been burned. That is all there is to it."

She's got the boys all guessing,
From freshman up the scale;
A number tried to nail her
But at that, the bunch all fail.
You see her first with one lad,
We'll say from Weston way;
And then she'll nail some prep. school-boy
To kid along next day.
She sure has got them worried,
They don't know where they're at,
You ought to see their happy smile
When to her, they doff their hat.
So, Elsie, just a minute,
Before you pass this by,
Please settle all their arguments
And pick a steady guy.

§ § §

As Seen By The Class of 1917

The faculty are a bunch of gentlemen hired to help the Seniors run the school.

§ § §

In Analyt

Mr. Pinkham—"Now can someone give me an example of an imaginary sphereoid?"

Stude—"Why, yes, sir, a rooster's egg."

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Employers have *high respect* for the young man whose life is insured.

Life insurance is the foundation of banking credit in hosts of cases, and makes a man successful in business.

The time will come when you will need it for *family* reasons. It will cost you more THEN than it will *now*. Ask any man of *forty* whether or not a young man should take life insurance!

Then start your life right by buying while you are young and the rate is lowest. Save *money*, and possess the FRIEND that every man desires to gain, but that so often is missed *because sought too late!*

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Directory of Engineering Terms

Transformer.—A black, iron box filled with wire and other things and placed on poles near houses to strengthen current that has come a long way.

Synonym.—Trolley car, storage battery, motor.

Slide Rule.—A mysterious mechanical device, held in awe by Co-Ops. and believed to be capable of solving anything from Physics to Calculas. Favorite weapon of "Joe" Coolidge.

Syn.—Multiplication tables, logarithms.

Dry Battery.—A co. of artillery after a day's march with nothing to drink.

Syn.—Salt cod-fish.

Turbine.—A round iron casing containing curved spokes which travel like sixty. Usually hitched to a dynamo.

Syn.—Steam engine, water wheel.

Thesis.—Something which Seniors have to do in order to graduate and which takes all their time.

Syn.—Bridge, Evinrude motor, drill press, magnetic brake.

Beaker.—A glass container which is very fragile.

Syn.—$1.00.

Pulsometer.—Something which the Mechanicals measure their pulse with, after they have been studying Thermo.

Syn.—Pendulum.

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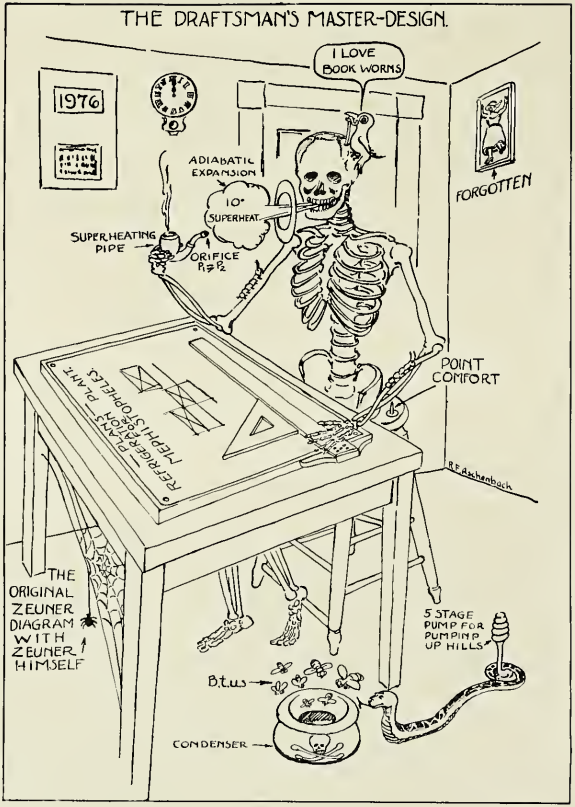
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Final Examination in M.E.

(1) From data obtained in experiment on the Corliss engine, determine the thermodynamic loss in Gerry's Overland when it is running on one cylinder and the carbureter missing.

(2) Tell what you know about the advantages of superheaters over condensers, as compared with the advantage of Thermo over Hydraulics.

(3) Design a 1000 H.P. boiler, determining accurately to ten places the shearing and crushing stresses on each rivet in the girth seam and on every other rivet in the longitudinal joint. (Assume pressure in boiler as infinite (dt) and diam. of rivets as zero.) Do not spend more than 7 minutes on this question.

(4) From your personal experiences write what you can about the engineering prospects at the St. Jimmy and why a checker tournament or math. exam. would not be appropriate there.

(5) Anyone passing this exam. will be examined as to whether he is a genius or a nut.

§ § §

In Metallurgy

Mr. Geromanos—"How was iron discovered?"

Co-op—"They smelt it."

§ § §

Teacher—"Wise men hesitate, fools are certain."

Co-op—"Are you sure?"

Teacher—"I am certain."

The Freshman's Psalm

Joe Coolidge is my teacher; I shall not pass.

He maketh me explain math. problems, and exposeth my ignorance before the whole class.

He restoreth my sorrow: he causeth me to give difficult rules for my own sake.

Yea, though I study until midnight, I cannot complete my home work, for daily examinations and flunk marks sorely trouble me.

He prepareth Engineering Computation for the sorrow of his freshman class: he giveth me a low mark; my sorrow runneth over.

Surely conditions exams will follow me all the years of my life; and I will remain in his classes forever.

§ § §

Mary had a little lamb,
She fed it gasoline.
It got too near the fire one day
And since has not "benzene"!

§ § §

Heard in the Chem. Lab.

"Hey, there, why are you making that fellow eat that cake of yeast?"

"Well, blame it, he swallowed my two bits an' I'm going to raise the dough."

§ § §

Out on the Campus—Hunt. Ave.

Financial Statement of the Cauldron

Debit:	
Printing and Publishing	$667.98
Engraving	199.99
Postage (Editor's personal use)	1,070.02
Photographer	123.00
Photographs of Naimon (for the girls)	43.00
Carfare to Lawrence (for Nutting)	97.07
Bill at "Cafe De Landers" (Staff banquet)	1,234.57
7 Subscription Seats at St. Jimmie for season	415.75
Gym. privileges for Co-Ops.	5,000.01
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Typewriter for Managing Editor	60.00
Chem. books for Business Manager	17.76
Tunnel from Main Building to Electrical Lab.	2,047.03
Advertising Manager's Expenses	5,176.17
Total Expenses	$18,652.35
Credit:	
Received from sale of CAULDRONS	$477.88
Personal subscription by Editors	1.07
Total Deficit	$18,173.40
Appropriation from War Department	18,173.40
Balance	$00,000.00

Thus the first issue of THE CAULDRON has been a success financially.

After running a very detailed experiment in the chemistry lab. one of the second year students presented the following report on his findings:

"A kiss is a small explosive occurrence of low commercial value, but highly esteemed as a gift or souvenir. It thrives behind palms, in the shade of icebergs, at the Junior Prom., and in most any secluded spot throughout a wide range of temperature. When well cared for it attains a magnificent size and delicious flavor. It is something which a girl always looks forward to with expectancy and receives with surprise."

It goes without saying that Mr. Odom approved the report.

§ § §

Mr. Mabbott says that a man's troubles are nine-tenths feminine gender.

§ § §

Big fleas have little fleas
Upon their backs to bite 'em,
And little fleas have smaller fleas,
So on, ad infinitum. —*Ex.*

§ § §

Overheard in the College Barber Shop

Co-op—"Do you suppose you can cut my hair without making me look like an idiot?"

Barber—"It will be a pretty difficult thing to do, but I will try."

Things that *grow* on a man—habits and whiskers.

§ § §

Algebraical symbols are used when you don't know what you are talking about.

§ § §

In Physics I

Mr. Coolidge—"What is a vacuum?"

Freshman—"A vacuum is a large empty space where the Pope lives."

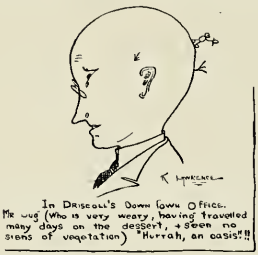
§ § §

One day, in an Organic Chemistry lecture, Mr. Kneeland was asked the following question:

"If a horse can haul a ton of coal, how much can ethyl alcohol?"

§ § §

We took sweet counsel together—Faculty meeting.


In Driscoll's Down Town Office.
Mr Mug (Who is very weary, having Travelled many days on the dessert, + seen no signs of vegetation) "Hurrah, an oasis"!!

From the Chem. Lab.

Try this on your piano:

Potassium, iodine and sulfur, under slight pressure give an interesting result as follows:

$$K + I + 2S = KISS$$

This experiment may not result as above but instead, the reaction may be violent. Therefore, experiment should be attempted only in the absence of light, and when few (usually two) are present.

§ § §

Mr. Pinkham, discussing link-work: "Mr. Hawes, what do we consider as stationary?"

Ty Fuwa: "Pencil and paper."

Whereupon Mr. Pinkham puts the multiplication tables on the board to be copied.

§ § §

[Ed's. note.]—Cohen handed in the following saying: "Here is a good one that I sprung in class that you can use."

Mr. Leighton.—Did you fellows ever have test pits.

Co-op.—No, but we had plenty of tests.

§ § §

Otterson, the detective, finds out who pinched his soft hat and gets $3.00 for it. We can't all be bright.

Mr. Coolidge—"What is meant by a horse power?"

Freshie—"Why, it's the distance one horse can carry a pound of water in an hour."

Co-op—"What is the darkest hour in a girl's life?"

Elsie—"When she wakes up to find that she has no match."

§ § §

Mr. Odom—"It is a well-known fact that nature abhors a vacuum. Probably this accounts for so many solid bone heads."

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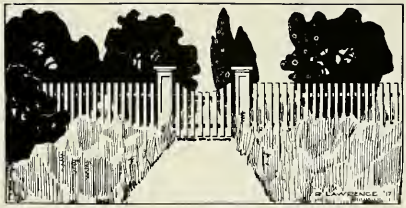

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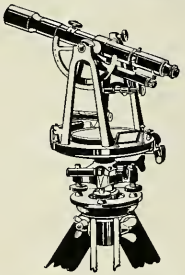

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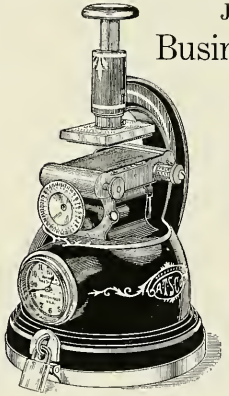

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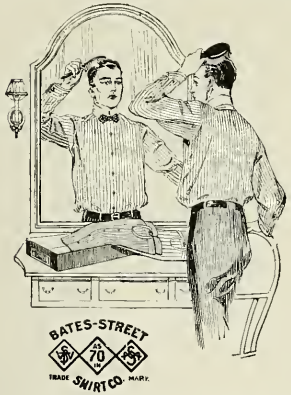

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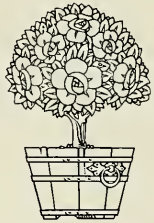

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